Differential Diagnosis in CLINICAL MEDICINE

R Deenadayalan

Forewords
T Gunasagaran
S Shiva Kumar
L Pari

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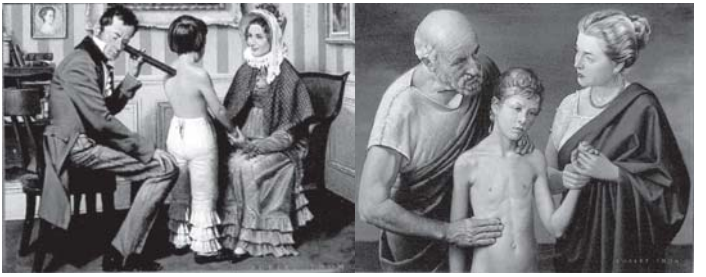

Differential Diagnosis in Clinical Medicine

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Differential Diagnosis in Clinical Medicine

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Dedicated to

My Children and Grandson
Who are a Great
Source of Inspiration

Dr T Gunasagaran
Vice Chancellor

Meenakshi University
Enathur, Kancheepuram 631 552

Foreword

Every book is meant to bring concept to those who care to read them. Books on medical subjects are vast in number and every author strives to fill a need that he himself has felt. Some authors achieve this objective, but others, their intentions though are genuine meander into a dreary desert of words.

Prof R Deenadayalan MD (Gen Med) has made a serious attempt in trying to help a hard pressed medical student by presenting him with a work based on two decades of experience superimposed on those of his teachers. Thus, a simple but a very useful glossary of differential diagnosis of clinical signs and entities has been created. Though this cannot replace a formal textbook, it will serve as a ready reckoner to the beleaguered medical student who labors under an ever increasing load of information and changing priorities.

The faculty of the Meenakshi University, I am sure, will find this contribution very useful and I am definite that they will recommend it to their students and colleagues. This book will be a bedside companion to students and staff alike.

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Foreword

Dr R Deenadayalan has a reputation as an excellent teacher of clinical medicine to both undergraduate and postgraduate medical students. In this era, where modern diagnostic facilities are easily available, clinical medicine has unfortunately taken a back seat. But medicine is not an exact science, as even with all the modern diagnostic facilities, diagnosis can be difficult. In many rural areas diagnostic facilities are not available and clinician has to rely only on clinical methods for diagnosis. It is, therefore, apt that Dr R Deenadayalan has written this book on *Differential Diagnosis in Clinical Medicine* which would be of immense benefit to undergraduates, postgraduates and clinicians to refer to a particular system and look for differential diagnosis. It should be remembered that clinical medicine is an art as well as science and one cannot replace clinical medicine even in this present era.

I congratulate Dr R Deenadayalan for the immense efforts to bring this book and wish him good luck in his endeavors.

S. Shivakumar

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Foreword

It is with great pride and pleasure that I write the foreword to this book on clinical medicine by Prof Dr R Deenadayalan. He is sincere teacher, very popular among students. They had parental respect and great regard towards him.

I know Prof Dr R Deenadayalan for several years. He has put in a lot of efforts to bring out this concised book. The book is an expression of his teaching career and service to patients over a long period in various hospitals.

Medicine is both a science and an art, continuously changing and challenging. Obviously, it is too far vast a field to ever summarize in a textbook of any size. The tremendous developments in the field of medicine have increased the bulk of textbooks of medicine. A sincere attempt has been made to incorporate both the clinical methods and the critical aspects. Thus, this book is a handy one with adequate information. Despite the enormous information available in a number of textbooks or at the push of a key on computer, it is less frequently that the students or house officers are benefited by these. Hence, a ready reckoner like a book of this kind, will be of immense use to them.

This book has been designed to provide a rapid and thoughtful initial approach to medical problems seen by students and internees with greater frequency. Questions that frequently come from faculty to the house staff on rounds, have been anticipitated and important ways of arriving at diagnosis are presented. This approach will facilitate the evidence-based medicine discussions that will follow the work up of the patient.

This well-conceived book should enhance the ability of every medical student to properly evaluate a patient in a precise timely fashion and to be stimulated to work the various possibilities in diagnosis.

I am sure that this book will prove to be a worthy addition to medical education, aiding in proper diagnosis and hence timely management. It will be useful throughout the arduous but incredibly rewarding journey of learning medicine for students.

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Preface

Medicine is science. Practicing medicine is an art. When a doctor can make a proper history and physical examination, the correct diagnosis can be made. Because only after making a correct diagnosis, the physician can give a correct treatment. At time, patients may not bother about the diagnosis. The patients are mainly worried about relief of symptoms. To make a correct diagnosis, this book may be of some use.

In the book, the clinical usefulness is discussed. I have taken care, so that the book will be of some help for the undergraduates as well as postgraduates.

I have been teaching medicine nearly for two decades. So, I think that I can to some extent fulfill the needs of the students. There are so many books on clinical medicine, but, still this book also will fulfill the needs of a practicing doctor.

Suggestions to improve the book are welcome and it will be very much appreciated.

R Deenadayalan

Acknowledgments

In preparing this book, I have taken the help of my Assistant Professors and other colleagues.

Prof S Shiva Kumar had been helping me in preparation of this book. I must thank him for his advice in preparing this book.

I must thank the stenographer Mr S Thanthoney for preparing the book.

Contents

1 Chapter General Examination

FEVER

1. **How fever is beneficial?**
    1. Leukocytes show maximum phagocytic activity between 38-40°C
    2. During fever the circulating iron level goes down. Iron is helpful for the growth and reproduction of bacteria. So, when circulating iron level goes down, bacterial growth is prevented
    3. Fever produces direct inhibiting effect on certain viruses like polio and coxsackie viruses.
2. **How fever causes weight reduction?**
    1. ↑ BMR
    2. ↑ protein breakdown (catabolism)
    3. Water loss
    4. Anorexia (loss of appetite)
3. **Fever blisters (Herpes simplex) seen in**
    1. Pneumonia
    2. Malaria
    3. Streptococcal infections
    4. Meningococcal infections
    5. Rickettsial fever

Rare in

1. Typhoid
2. TB
3. Smallpox
4. *Mycoplasma pneumoniae*

4. Beneficial effects of fever

1. Neurosyphilis
2. Some forms of chronic arthritis
3. Gonorrhea
4. Malignancy—In fever there is release of endogenous pyrogens which activate T cells and this enhances host defense mechanism.

5. Ill effects of fever

1. Epileptiform fits
2. Weight loss
3. Sweating causes salt and water depletion
4. Depletion – Dehydration – Delirium

6. Fever without infection

1. Pontine hemorrhage
2. Factitious fever
3. Habitual hyperthermia
4. Drugs – Atropine, etc.
5. Malignancy – Leukemia, Hodgkin, etc.
6. Rheumatological disorders, e.g. SLE, rheumatoid arthritis, etc.

7. Fever in cardiovascular system disorders

1. Rheumatic fever
2. Infective endocarditis
3. Atrial myxoma
4. (TB) pericarditis (effusion)
5. Polyarteritis nodosa

6. Myocardial infarction
7. Pulmonary thromboembolism
8. CCF
9. Temporal arteritis

8. Fever in respiratory system disorders

1. Pyogenic infectious of lung – suppurative
2. Bronchitis
3. Pneumoconiosis
4. Pneumonia
5. Pleurasy

9. Fever in gastrointestinal tract disorders (abdominal)

1. TB peritonitis and TB abdomen
2. Crohn's disease
3. Acute appendicitis
4. Subdiaphragmatic abscess
5. Perinephric abscess

10. Fever in liver disorders

1. Infective hepatitis – preicteric stage
2. Amoebic liver abscess
3. Malignancy
4. Cholecystitis

11. Fever with malignant disorders

1. Hypernephroma
2. Ca pancreas
3. Ca lung
4. Ca bone
5. Hepatoma
6. Hodgkin
7. Non-Hodgkin's lymphoma
8. Acute leukemias

12. Fever in hematological disorders

1. Hodgkin's disease
2. Infections mononucleosis
3. Blood transfusion reactions (mismatched)
4. Hemorrhage into body cavities
5. Septicemic conditions

13. Fever in neurological disorder

1. Meningitis
2. Encephalitis
3. Cerebral abscess
4. Poliomyelitis – early stage
5. Acute polyneuritis
6. Head injury
7. Pontine hemorrhage
8. Cerebral malaria

14. Causes of fever with sweating

1. Malaria
2. TB
3. RS : Lung abscess
   Branchiectasis – acute stage
   Pneumonia
4. CVS : Infective endocarditis
   Myocardial infarction
   Aterial myxoma
5. Renal : Pyelonephritis
6. Others : Filariasis
   Any pyogenic infection

15. Special forms of fever

a. Charcot's fever

In acute cholecystitis with inflammation of the cystic duct, the patient is afebrile in daytime. But, evening temperature

shoots up to 105°F accompanied by chills. This is called Charcot's fever.

b. Pel-Ebstein fever – Fever lasting for 7–10 days and afebrile for about a week.
c. Pretibial fever – Leptospirosis
d. Factitious fever – Patient develops fever voluntarily by infecting contaminated material
e. Habitual hyperthermia – Fever with normal sedimentation rate. Usually occurs in young female
f. Black water fever – Malaria
g. Black fever – Kala-azar
h. Brake bone fever – Dengue

1. 1°F rise of temperature raises the BMR by 7%
2. 1°F rise of temperature ↑ the heart rate by 10 beats
3. Heart rate is increased by a maximum of 15 beats per minute during pregnancy.

16. Fever in muscle disorders

1. Polymyositis
2. Born holm disease
3. Crush injury to muscles

17. Fever in bone and joint involvements

1. Osteomyelitis – acute
2. Arthritis
   a. Rheumatoid
   b. Rheumatic
   c. Pyogenic
3. Malignancy – Osteosarcoma

18. Fever in renal disorders

1. Acute glomerulonephritis
2. Pyelonephritis
3. Cystitis
4. UTI

Infection without fever

1. Immunosuppressed patients.

19. Types of fever

1. Continuous – Fever is present continuously. Fluctuation of temperature is <1°F
2. Remittent – Fever present. Fluctuation >2°F
3. Intermittent – Fever present intermittently.

20. Causes of remittent fever

1. Typhoid
2. Infective endocarditis
3. Kala-azar
4. Plague (Remiteant or continuous)
5. Infectious mononucleosis
6. TB

21. Causes of continuous fever (sustained fever)

1. Pneumonia

22. Causes of intermittent fever

1. Malaria

23. Causes of hyperthermia

1. Heat stroke
2. Hyperthyroidism
3. Sepsis
4. Pontine hemorrhage
5. Anticholinergic drug overdose

HYPOTHERMIA

24. Causes of hypothermia

1. Pituitary insufficiency
2. Addison's disease
3. Hypoglycemia

4. Cerebrovascular disease
5. Myocardial infarction
6. Cirrhosis
7. Pancreatitis
8. Alcohol
9. Drugs – Barbiturates, alcohol, phenothiazines
10. Exposure to cold
11. Hypothyroidism
12. Wernicke's encephalopathy

DELIRIUM

25. Causes of delirium

1. Fever
2. Head injury
3. Uremia
4. Liver cell failure
5. Hypoxia
6. Hyponatremia
7. Postictal state
8. Drugs – Alcohol (withdrawal), Atropine
9. Senility

MEDICAL CAUSES OF ITCHING

26. Medical causes of itching (pruritus)

1. Cholestatic jaundice (more at nights)
2. Primary biliary cirrhosis
3. Hodgkin's disease
4. Uremia – chronic renal failure
5. Diabetes mellitus
6. Hyperthyroidism and hypothyroidism
7. Polycythemia rubra vera – especially after a hot bath
8. Advanced stages of pregnancy due to intrahepatic cholestatis

9. Sleeping sickness
10. Malignancy – leukemia – myloma
11. Psychogenic
12. Senile pruritus
13. Drugs – Aspirin, opium derivatives, quinine, penicillin, sulfa group of drugs
14. Onchocercus volvulus
15. Carcinoid syndrome
16. Iron deficiency

27. If there is rubella infection in the antenatal period the child will have:

1. Mental deficiency
2. Nerve deafness
3. Cataract
4. Patent ductus arteriosus
5. Pulmonary stenosis
6. Pulmonary artery branch stenosis

SKIN PIGMENTATION

28. Causes of palmar erythema

1. Chronic liver disease
2. Long standing cases of rheumatoid arthritis
3. Thyrotoxicosis
4. During pregnancy – disappears after delivery
5. Chronic leukemia
6. Chronic fever
7. Alcoholism
8. SLE
9. Polycythemia

29. Skin pigmentations seen in (including oral cavity)

1. Chronic renal disease
2. Chronic liver disease

3. Malabsorption syndrome
4. Addison's disease
5. Peutz-Zager syndrome

30. Causes of spider naevi

1. Liver disorders – Hepatic encephalopathy
2. Rheumatoid arthritis
3. Pregnancy appears between 2-5th month – disappears after delivery
4. Sometimes in normal individuals (Here it is less than 5 in number)

31. Causes of flapping tremor

1. Hepatic failure
2. Chronic renal disease
3. Cardiac failure
4. Respiratory failure

32. Causes of malar flush

1. Mitral stenosis
2. Lupus erythematosis

33. Striae of skin of abdominal wall
(Due to rupture of elastic fibers of skin)

- Multiparus women
- In multiparus women if there is sudden↑in abdominal size like
- Abdominal tumor
- Obesity
- Cushing syndrome

34. Causes of yellowish discoloration of skin

1. Jaundice
2. Carotene pigments
3. Quinacrine

4. Atabrine
   Slight degrees of bilurubin is first seen near the franulum of the tongue.

35. Causes of graying of hair (Loss of formation of melanocytes)

1. Aging
2. Hereditary
3. Albinism
4. Pernicious anemia
5. Over vitiligo
6. Chloroquine toxicity
7. Associated with B_{12} deficiency (Megaloblastic anemias)

Macule: Up to 1 cm, circumscribed flat discoloration not palpable

e.g. Flat naevi
Petechiae
Purpura
Drug eruption
Rubella, rubeola, typhoid, rheumatic fever, etc.

Papules: Up to 1 cm, circumscribed elevated superficial solid lesion

e.g. Elevated naevi
Warts
Secondary syphilis
Chickenpox, Smallpox, etc.

Nodules: Up to 1 cm, may be in level with or above or beneath the skin surface.

e.g. Xanthoma
Secondary syphilis
Epithelioma
Erythema nodosum

Vesicles: Up to 1 cm, circumscribed elevated, contain serous fluid

e.g. Chickenpox – Smallpox – Herpes zoster

Bullae: Larger than 1 cm. Circumscribed, elevated contain serous fluid

e.g. Burns and Scalds

Purpura	*Petechiae*	*Ecchymoses*
Up to 2 cm in size	1 – 2 mm size	2 – 5 mm size

36. Causes of hyperpigmentation of skin

1. Scleroderma
2. Addison's disease
3. Cirrhosis liver
4. Hemochromotasis
5. Fetty's syndrome
6. Pernicious anemia
7. Folic acid deficiency
8. Malnutrition
9. Starvation
10. Porphyria lutea
11. Drugs: Busulphan
    Arsenical
12. Pellagra
13. Malignancy (internal)
14. Irradiation
15. Alkaptonuria
16. Arsenic poisoning
17. Post dermal kala-azar
18. Onchocerca volvulus

37. Causes of hypopigmented patches

1. Tenia versicolor leprosy
2. Vitiligo
3. Leprosy

38. Causes of blushing of skin

1. Emotional
2. Fever

3. Hyperthyroidism
4. Carcinoid tumor
5. Drugs allergy
6. Hypercapnia (Exessive CO_2 in blood)

39. Causes of ichthyosis

1. Lepromatous leprosy
2. Hodgkin's disease
3. Malabsorption
4. Vitamin A deficiency
5. Hypothyroid state
6. Pellagra
7. Refsum's disease – rare
8. Congenital

40. Some of the autoimmune disorders

1. Hashimoto's thyroiditis
2. Addison's disease
3. Thyrotoxicosis
4. Primary atrophic hypothyroidism
5. Idiopathic hypoparathyroidism
6. Insulin dependent diabetes
7. Pernicious anemia
8. Rheumatic fever

41. Raynaud phenomena seen in (Collagen vascular disorders)

1. Scleroderma
2. Disseminated lupus erythematosis
3. Rheumatoid arthritis
4. Dermatomyositis
5. Primary pulmonary hypertension (in early stages)
6. Myeloma
7. Atrial myxoma
8. Thoracic outlet syndrome
9. Shoulder hand syndrome

10. Drugs: Reserpine and methyldopa, guanethidine
11. Primary systemic sclerosis
12. CREST syndrome
13. Polymyosities
14. Sjögren's syndrome
    Color changes – Palar, cyanosis, erythemia
    Symptoms are: 1. Numbness, 2. Tingling, 3. Burning sensation

42. Cafe au lait spots seen in

1. Multiple neurofibroma
2. Albright's syndrome

43. Pallor without anemia

1. Shock
2. Myocardial infarction

44. Causes of intermittent jaundice

1. Drugs like–Methyldopa, oral contraceptives, salicylates, INH, Chloramphenicol, carbon tetrachloride, trichloroethylene
2. Acute intermittent porphyria
3. Migrating worms obstructing the ampulla of Vater
4. Inflammatory edema of ampulla of Vater
5. Gallstones intermittently obstructing the bile duct
6. Spasm of bile duct
7. Fever like malaria – RBC destruction
8. III trimester of pregnancy
9. Transient formation in pulmonary thromboembolism
10. Lobar pneumonia

45. Causes of bigger teeth

1. Maternal diabetes mellitus
2. Maternal hypothyroidism
3. Big baby

Small teeth

1. Darwin syndrome

46. Fear of swallowing (Odynophasia)

1. Rabies
2. Tetanus
3. Hysteria
4. Pharyngeal paralysis due to fear of aspiration
5. Painful esophagitis

47. Causes of erythema nodosum

1. Leprosy
2. Rheumatic fever
3. Tuberculosis
4. Sarcoidosis
5. Fungal infections
   - coccidioidomycosis
   - histoplasmosis
6. Infection with hemolytic *Streptococcus*
7. Cat scratch fever
8. Drugs like – Sulfathiazole

48. Diseases spread by dogs

1. Rabies
2. Hydatid disease
3. Tetanus
4. Asthma by allergy
5. Leptospirosis
6. Brucellosis
7. Blastomycosis

49. Diseases spread by cats

1. Toxoplasmosis
2. Rabies
3. Asthma by allergy
4. Cat scratch fever
5. Tularemia

50. Diseases spread by rats

1. Plague
2. Leptospirosis
3. Tetanus
4. Asthma by allergy
5. Weil's disease

51. Diseases spread by laboratory animals

1. Asthma
2. Toxoplasmosis
3. Rabies

52. Diseases spread by fish

1. Food allergy
2. Food poisoning
3. Asthma
4. Allergic skin lesions
5. Diphyllobothrium latum—fish tapeworm

53. Diseases spread by pigs

1. Cysticercosis – Tapeworm
2. Encephalitis
3. Brucellosis
4. Leptospirosis

54. Parasites producing eye lesions

1. Toxoplasma
2. Onchocercus volvulus
3. Loa Loa

55. The hormones (only two) which are not controlled by other hormones (Other endocrine glands)

1. Parathyroid hormone
2. Insulin

56. Blue sclera

1. Osteogenesis imperfecta
2. Marfan syndrome

3. Iron deficiency anemia
4. Pseudohypoparathyroidism
5. Newborn and young children (Normal)

57. Spider naevi seen in

1. Hepatic failure
2. Rheumatoid arthritis
3. Normally (Particularly in children) – Rare
4. Pregnancy (Appear between 2nd and 5th month and disappear within 2 months after delivery)

58. NAILS (Transverse ridges)

1. Beau's lines → Trauma, systemic stress
2. Terry's nail → Cirrhosis (Tips-pink proximate white)
3. Mee's lines → Hypoalbuminuria parallel white transverse lines
4. Lindsay's nail → Renal failure, distal red proximal white
5. Onycholysis → Fungal infection/psoriasis/ hyperthyroidism
6. Spoon nails → Iron deficiency anemia
   Lichen planus
   Hypothyroidism
   Syphilis
   Coronary arterial disease
   Rheumatic fever
7. Subungual splinter hemorrhage → Infective endocarditis
8. Clubbing → Parrot-beak appearance
9. Wider nail → Acromegaly
10. Long narrow nail → Hypopituitarism
11. Yellow nail syndrome → Nail plates yellow
12. Hypoplastic nail → Turner's syndrome
13. Eggshell nail → Syphilis

14. Hippocratic nails → Respiratory and circulatory disease/cirrhosis
15. Brittle nail (Onychorrhexis) → The free end of nail is laminated and irregular seen in hypocalcemic malnutrition

59. Nails

1. Rate of growth of nail is 0.5 mm per week (0.1 mm per day)
2. Nail growth is faster in summer than in winter
3. Nails in hands grow about 4 times faster than nails in toes
4. Nails of long fingers grow more rapid than in small fingers
5. It is an analog of clear in the lower arrivals

60. Causes of Dupuytren's Contracture: (One or both sides may be affected) (palmar fibrosis)

1. Alcoholic liver disease
2. Trauma
3. Epilepsy
4. Old age
5. Diabetes mellitus
6. May be hereditary

61. Causes of generalized lymphadenopathy

1. Lymphatic leukemia
2. Lymphoreticular malignancy
3. Secondary syphilis
4. Measles
5. Infectious mononucleosis
6. Sarcoidosis
7. Toxoplasmosis

62. Causes of bilateral exophthalmos

1. Thyrotoxicosis
2. Craniostenosis
3. Acromegaly

4. Myxedema
5. Cavernous sinus thrombosis
6. Hyperpituitarism
7. Lymphomas
8. Leukemia

63. Causes of unilateral exophthalmos

1. Cavernous sinus thrombosis
2. Primary tumors within the orbit
3. Retro-orbital intracranial tumors
4. Diseases of nasal air sinuses (mucococle, carcinoma)
5. Arteriovenous aneurysms
6. Thyrotoxicosis
7. Myxedema

64. Polydactyly (supernumerary fingers)

Congenital
Familial
Associated with certain syndromes
- Laurence-Moon-Biedl syndrome
- Juvenile obesity
- Retinal degeneration
- Genital hypoplasia
- Mental retardation

65. Koilonychia causes (spoon nails)

1. Iron deficiency anemia
2. Syphilis
3. Lichen planus
4. Rheumatic fever
5. Hypothyroidism
6. Fungal dermatosis

66. Causes of big lips

1. Cretinism

2. Myxedema
3. Acromegaly

67. Hutchinson's triard

1. Hutchinson's teeth
2. Interstitial keratitis
3. Labyrinthine deafness

68. Causes of saddle nose

1. Syphilis
2. Leprosy
3. Wegener's granuloma
4. Achondroplasia
5. Fracture nasal bone
6. Hurler's syndrome
7. Down syndrome

69.

S.No.	*KF ring*	*Arcus senilis*
1.	Cornea between ring and limbus is normal	Cornea seen between ring and limbus
2.	May be interrupted	Continuous
3.	Golden brown in color	Grayish white
4.	Seen in the desmous membrane	—
5.	Always pathological	Physiological
6.	Better seen in slit-lamps examination	Can be seen by naked eye

70. Causes of pescavus

1. Fredrick's ataxia
2. Peroneal muscular atrophy
3. Spina bifida occulta
4. Hereditary spastic paraplegia
5. Roussy-Lévy syndrome

6. Myelodysplasia
7. Syringomyelia
8. Hereditary motor sensory neuropathy type I

71. Causes of pesplanus

1. Marfan's syndrome
2. Ehlers-Danlos syndrome
3. Osteogenesis imperfecta

72. Friedreich's foot: High arch foot with hammer toes seen in Friedreich's ataxia.

73. Causes of kyphoscoliosis

1. Spinocerebellar degeneration – Fredericton's ataxia
2. Torsion dystonia
3. Marfan's syndrome
4. Homocystinuria
5. Poliomyelitis
6. Syringomyelia
7. Progressive spinal vascular atrophy
8. TB spine/Tumors of spine
9. CV anomaly
10. Senile osteoporosis
11. Ankylosing spondylitis
12. Paget's disease
13. Acromegaly
14. Rickets

74.

Neonate	→	**Below one month**
Infancy	→	0 – 2 years
Childhood	→	2 – 10 years
Adolescence	→	10 – 20 years
Youth	→	20 – 35 years
Middle age	→	35 – 55 years
Old age	→	55 and above

Presenile → <65 years
Senile → >65 years

75. Exaggerated lumbar lordosis causes
1. Muscular dystrophy
2. Massive ascites
3. Massive abdominal tumors
4. Advanced stages of pregnancy

76. Pseudomyotonia both contraction and relaxation are delayed but more in relaxation
1. Hypothyroidism
2. Diabetes mellitus
3. Pernicious anemia
4. Hypothermia
5. Peripheral vascular disease
6. Anorexia nervosa
7. Ankle edema

77. Hammer toes seen in
1. Marfan syndrome
2. Hereditary motor sensory neuropathy type I
3. Friedreich's ataxia

78. KF ring seen in
1. Wilson's disease
2. Primary biliary cirrhosis
3. Sclerosing cholangitis

79. Carpal-tunnel syndrome seen in (pain will be more at night)
1. Acromegaly
2. Hypothyroidism
3. Pregnancy
4. Amyloidosis
5. Sarcoidosis
6. Rheumatoid arthritis

80. Vitiligo is seen in the following systemic disorders

1. Hashimoto's thyroiditis
2. Pernicious anemia
3. Addison's disease
4. Diabetes mellitus
5. Uveitis

81. Absent lateral eyebrows

1. Hypothyroidism
2. SLE
3. Iatrogenic
4. Drugs

82. Causes of central retinal artery occlusion

1. Carotid artery emboli
2. Giant cell arteritis
3. Emboli from heart

83. Causes of central retinal vein occlusion

1. HBP
2. Atherosclerosis
3. Hyperviscosity syndrome
   - Dysproteinemias
   - Blood dyscratic

84. Causes of retinal neovascularization

1. Diabetes mellitus
2. Hemoglobinopathies

85. Causes of esophageal candidiasis

1. Systemic illnessc
   - Immunocompromised state HIV
   - Diabetes mellitus
   - Hematological malignancy
   - Achalasia cardia
   - SLE
   - Alcoholism

2. Drugs – Steroids — Systemic
   Inhalation
   Topical

   Antibiotics

   H_2 receptor blockers

86. Causes of retinitis pigmentosa

1. Refsum's diseases
2. Abetalipoproteinemia
3. Laurence-Moon-Bardet-Biedl syndrome

87. Carotenoderma

(Carotene is converted to vitamin A in liver. For this thyroid hormone is necessary)

So carotenemia can occur in

1. Myxedema
2. Liver diseases

88. Dupuytren's contracture

1. Progressive fibrosis of palmar fascia resulting in painless flexion contracture of fingers.
2. Ring finger is first affected and most prominently involved. Then little finger, middle finger, index finger and thumb.
3. Puckering of palmar skin is typical.
4. Sometimes there may be modulus in the palmar fascia.
5. Seen more in B ♂ and than in ♀
6. Appears after the age of 25 years.
7. Seen in liver disease, epilepsy old age, diabetes mellitus.
8. Occasionally occurs as familial.

CANCER

89. Name some of the precancerous conditions

1. Leukoplakia
2. Junctional nervus

3. Xeroderma pigmentosa
4. Gluten enteropathy

90. Oncogenic tissues (viruses causing tumors)

1. Epstein-Barr virus → Burkitt's lymphoma
2. Hepatitis B virus
3. Hepatitis C virus } Hepatoma
4. Herpes simplex virus → carcinoma cervix (HSV_2)

91. Tumor blush (due to new vessel formation) seen in

1. Hepatoma – primary
2. Hypernephroma

SMELL

92.

1. Fruity or abnormal smell – Diabetic ketosis
2. Ammoniacal odor – uremia
3. Musty odor (fetor Hepatitis) – liver failure
4. Alcoholic smell – Alcoholism
5. Halitosis – Bad breath, e.g. starvation
   Gingivitis
   Suppurative lung disease

93. Different odors and diseases

1. Halitosis → Suppurative lung disease
2. Fruity odor → DKA
3. Ammoniacal odor → Renal failure
4. Mousy or fishy Odor/Feter Hepaticas → Liver cell failure
5. Bitter almond or silver polish odor of breath → Cyanide poisoning
6. Alcoholic odor → Alcohol ingestation

SWEATING

94. Pathological causes of sweating

1. Pyrexia
2. TB – during sleep (evening)
3. Pyogenic infection
4. Hyperthyroidism ↑ BMR
5. Fluid – blood loss shock
6. Hypoglycemia
7. Psychoneurosis
8. Pheochromocytoma

JOINTS

95. Charcot joint: Causes

1. Tabes dorsalis
2. Syringomyelia
3. Hereditary sensory neuropathy
4. Charcot-Marrie-Tooth disease
5. Familial dysautonomia
6. Diabetes mellitus
7. Leprosy
8. Spina bifida
9. Prolonged local steroid therapy
10. Congenital insensitivity to pain
11. Trauma

96. Carpal-tunnel syndrome

Seen in:

1. Myxedema
2. Rheumatoid arthritis
3. Amyloidosis
4. Acromegaly
5. Trauma
6. Premenstrual edema

7. Edema of pregnancy
8. Progressive systemic sclerosis
9. Mucopolysaccharidosis
10. Tenosynovitis of flexor tendonitis of wrist
11. Diabetes mellitus → neuropathy
12. Ca bronchus

97. Causes of perforation of nasal system

1. Syphilis (posterior perforation)
2. Lepromatous leprosy
3. Intranasal trauma
4. Chromium poisoning
5. Tuberculosis (anterior perforation)
6. Lupus erythematosus
7. Workers involved in chrome plating
8. Inhalation of dust containing arsenic
9. Rheumatoid arthritis
10. Wegener's granulomatosis
11. Progressive systemic sclerosis (PSS)

98. Causes of deformity of skull

1. Hydrocephalus
2. Oxycephaly
3. Paget's diseases
4. Apert's syndrome
5. Rickets
6. Congenital syphilis
7. Tumor of skull bones
8. Thalassemia major – bossing of skull
9. Hurler's syndrome (large and boat-shaped head)

99. Typical face abnormalities seen in:

1. Hansen disease
2. Acromegaly

3. Nephrotic syndrome
4. Cushing syndrome
5. Myxedema
6. Parkinsonism
7. Pseudobulbar palsy
8. Facial palsy
9. Facial hermiatrophy
10. Scleroderma
11. Tetanus
12. Mikulicz syndrome
13. Congenital syphilis

100. Causes of alopecia

1. Hereditary
2. Syphilis
3. Diabetes mellitus
4. Fungus of scalp and pediculosis
5. Pituitary insufficiency Simmonds' disease
6. Irradiation
7. Cytotoxic drugs
8. Dystrophia myotonia
9. Typhoid – rare
10. Chemicals; thallium
11. Deficiency of zinc
12. Werner's syndrome

101. Hutchinson's triad (Characteristic of congenital syphilis)

1. Hutchinson's teeth
2. Interstitial keratitis
3. Labyrinthine disease (causing deafness)

102. Perforation of the palate

1. Syphilis
2. Irradiation
3. Congenital

103. High orched palate

1. Marfan syndrome
2. Turner syndrome
3. Myotonic dystrophy
4. Rubinstein Taybi syndrome
5. Achondroplasia

104. Vincent's angina (Trench mouth)

Infection of tonsil and gums usually unilateral causes necrosis with a dirty yellow exudate; when removed causes bleeding. DD– syphilis, diphtheria. Tender painful gingivatis. Bleeding on pressure.

105. Ludwig's angina

Swelling of floor of mouth, elevation of tongue, difficulty in swallowing and breathing. Submaxillary space, sublingual space and submental space are involved due to infections.

106. Cause of webneck (and low hairline)

1. Klippel-Feil syndrome
2. Turner syndrome
3. Ullrich Noonan syndrome
4. Pseudohypoparathyroidism
5. Pseudohypoparathyroidism

107. Cause of bony (sternal) tenderness (It is a sign of expansion of bone marrow)

1. Leukemia's
2. Myeloproliferative disorders
3. Severe anemia
4. Multiple myeloma
5. Hodgkin's disease
6. Secondaries

108. Causes of tall stature

1. Constitution of body – because of tall parents
2. Children with thyrotoxicosis (Before epiphytical fusion)

3. Klinefelter's syndrome
4. Pituitary adenoma
5. Acromegaly
6. Gigantism
7. Marfan syndrome

109. Causes of dwarfism

1. Constitutional delay in growth
2. Genetic - Noonan syndrome – Fanconi syndrome
3. Nutritional
   a. Deficiency intake
   b. Intestinal malabsorption
   c. Chronic renal disease – renal rickets
   d. Chronic infestation
   e. Protein losing disorders
4. Hypoxia
   a. Congenital cyanotic heart disease
   b. Chronic pulmonary diseases
5. Chromosomal abnormalities
   a. Down syndrome
   b. Turner syndrome
6. Skeletal disorders
   a. Achondroplasia
   b. Hurler's syndrome
7. Endocrine disorders
   a. Hypopituitarism
   b. Hypothyroidism – cretinism
   c. Cushing's disease
8. Trace elements deficiency

   Hypogonadal dwarfisms

110. Causes of bilateral enlargements of parotids

1. Mumps
2. Sarcoidosis

3. Mickulicz syndrome – painless
4. Cirrhosis (alcoholic) liver
5. Sjögren's syndrome
6. Malnutrition – Kwashiorkor
7. Leukemia
8. Lymphoma
9. Drugs and chemicals – iodine, mercury, lead
10. HIV
11. Thyrotoxicosis

111. Unilateral enlargement of parotids

1. Obstruction of parotid duct (stenosis duct)
2. Typhoid
3. Parotitis
4. Leukemia

112. Monkey face seen in

1. Marasmus
2. Hypertrichosis lanugosa (also known as dog face)

113. Moon face seen in

1. Protein energy malnutrition
2. Cushing's syndrome

114. Rheumatoid factor will be positive in the following conditions

1. Rheumatoid arthritis
2. Systemic lupus erythematosus
3. Sjögren's syndrome
4. Polymyositis
5. Scleroderma
6. TB
7. Leprosy (Lepromatous and Tuberculosis)
8. Syphilis
9. Infective endocarditis
10. Viral hepatitis

11. Infectious mononucleosis
12. Parasitic infestations
13. Pneumoconiosis
14. Scleroderma
15. Drug abusers
16. Chronic active hepatitis
17. Cirrhosis liver
18. Idiopathic pulmonary fibrosis
19. Lymphomas
20. Repeated blood transfusion
21. Typhoid

115. Conditions causing early morning stiffness and pain in joints

1. Rheumatoid arthritis
2. Ankylosing spondylitis

116. Causes of shoulder hand syndrome

1. Myocardial infarction
2. Trauma
3. Hemiplegia
4. Degenerative joint disease of cervical spine – cervical spondylitis

LYMPH NODE

117. Supraclavicular lymphadenitis in (left lower lobe involvement cause right supraclavicular lymphadenopathy)

1. Cancer stomach–on left side lymph nodes
2. Sarcoidosis
3. Reticulosis
4. TB
5. Lung cancer
6. Tumor of testes – on left side

118.
1. Subcutaneous nodules → Rheumatic fever
2. Osler nodes → Infective endocarditis
3. Rheumatoid nodules → Rheumatoid arthritis
4. Heberden's nodes → Degenerative joint disease/Osteoarthritis
5. Bouchard's nodes → Degenerative joint disease/Osteoarthritis
6. Warty nodules on feet and legs → Pretibial mycoderma
7. Painless firm fibrous nodes over bony pronmenus → Yaws
8. Haygarth's nodes: Spindle-shaped enlargement of proximal interphalangeal joints → Rheumatoid arthritis
9. Xanthelasma → Hypercholesterolemia
   Brownish yellow
   Around eyes
10. Xanthoma → Also in hands

TESTES

119. Causes of primary testicular atrophy: Pituitary function is normal – but testicular function is impaired
1. Trauma to testes
2. TB infection of testes
3. Syphilis
4. Gonorrhea
5. As a complication orchitis following mumps
6. Surgical removal
7. Undescended testes
8. Irradiation
9. Drugs

120. Causes of secondary testicular failure
1. Pituitary disorders
2. Congenital–chromosomal abnormality–Klinefelter syndrome

3. Cirrhosis liver (Alcohol)
4. Hemochromatosis (By producing cirrhosis)
5. Mumps
6. Lepromatous leprosy
7. Myotonia dystrophia
8. Testicular atrophy — Congenital / Acquired

Testicular atrophy (Evidence):

1. Small testes (Normal size is 2 × 3 × 4 cm)
2. Soft in consistency
3. Absence of testicular sensation

ENDOCRINE

121. Causes of impotence

1. Psychological
2. Diabetes mellitus
3. Alcoholism
4. Tabes dorsalis
5. Disseminated sclerosis
6. Spinal infection
7. Friedreich's ataxia
8. Hypopituitarism
9. Hypogonadism
10. Testicular atrophy
11. Dystrophia Myotonic
12. Irradiation
13. Lepromatous leprosy
14. Subacute combined degeneration of the cord
15. MND
16. Drugs
17. Hemochromatosis

122. Causes of loss of libido

1. Psychogenic
2. Cirrhosis liver
3. Hemochromatosis
4. Dystrophia myotonic

123. Causes of gynecomastia

1. Cirrhosis liver
2. Lepromatous leprosy
3. Hemochromatosis
4. Myotonic dystrophy
5. Klinefelter syndrome
6. Estrogen secreting tumors of adrenal gland
7. Testicular atrophy
8. In males at puberty
9. African human trypanosomiasis
10. Drugs:
    a. Estrogen for cancer prostate
    b. Digitalis
    c. Spironolactone
    d. Cimetidine
    e. Alpha methyldopa
    f. Reserpine
    g. Busulfan
11. Hepatoma – painful gynecomastia
12. Hyperthyroidism
13. Leukemia
14. Lymphoma
15. Bronchogenic carcinoma (adenocarcinoma and large cell carcinoma)
16. Prostatic malignancy treatment with estrogen

124. Alpha fetoprotein seen in

1. Hepatoma
2. Embryonal tumor of testes

3. Epithelial carcinoma of foregut (especially stomach)
4. Nonmalignant liver disorders like – Acute viral hepatitis – Active chronic hepatitis
5. Ataxia telangiectasia (Louis-Bar syndrome)
6. Hepatoblastoma

125. Low ceruloplasmin level seen in

1. Wilson's disease
2. Fulminant hepatic failure
3. Severe chronic liver failure
4. Protein losing enteropathy
5. Malabsorption syndrome

126. Causes of ↑ serum amylase

1. Pancreatitis – Acute stage only
2. Perforated peptic ulcer → Peritonitis
3. Intestinal obstruction
4. Pseudocyst of pancreas (here there is persistant elevation)
5. Salivary gland tumors

127. Causes of hypocalcemia:

1. Hypoparathyroidism
2. Malabsorption syndrome
3. Osteomalacia due to true vitamin D deficiency or vitamin D resistance
4. Renal failure
5. Hypoproteinemia
6. Pancreatitis – acute stage

128. Causes of hypercalcemia

1. Primary hyperparathyroidism
2. Internal malignancy (with bone metastasis)
3. Sarcoidosis
4. Multiple myeloma
5. Hypervitaminosis D

6. Milk alkali syndrome (Burnett syndrome)
7. Adrenal insufficiency
8. Paget's disease
9. Idiopathic hypocalcemia of infancy
10. Thyrotoxicosis – rare

129. ↑of catecholamines

1. Pheochromocytoma
2. Hypertension
3. Infective polyneuritis
4. Hypothyroidism
5. Hypoglycemia
6. Vigorous physical activity
7. Acute myocardial infarction
8. Diabetic ketoacidosis
9. Depression
10. Duodenal ulcer

130. Causes of ↑ BMR (Hypermetabolic state)

1. Thyrotoxicosis
2. Pheochromocytoma
3. Fever

131. Patients appear older than normal age

1. Progeria
2. Heavy chronic smoking
3. Chronic exposure to sunlight (Rapid skin changes)

132. Patients appear young than normal age

1. Hypogonadism
2. Panhypopituitarism

PAIN

133. Seronegative arthritis

1. Ankylosing spondylitis
2. Reiter's syndrome

3. Psoriasis arthritis
4. Arthritis associated with ulcerative colitis and Crohn's diseases

134. Causes of headache (Pain and or discomfort from orbit to occiput)

1. Meningitis
2. Intracranial tumor/abscess
3. Migraine
4. Subarachnoid hemorrhage
5. Temporal arteritis
6. Tic douloureux
7. Glaucoma/refractive error
8. Intracranial AV malformation
9. RS causes
   - COPD (due to CO_2 retention)
   - Pneumonia
10. CVS causes
    - Infective endocarditis
    - Pulmonary embolism
    - CCF
11. Drugs and chemicals
    - Oral contraceptives
    - Nitrates (Vasodilators)
    - CO
    - CO_2
    - Ethanol

    Withdrawal of drugs like
    - Ergot
    - Amphetamine
    - Clonidine
    - β-blockers
12. Following LP
13. Hypoglycemia

14. Pseudotumor cerebri
15. Premenstrual headache
16. Anemia with Hb <10 g%
17. Hypertensive if the diastolic BP is more than 110 mm Hg

135. Causes of frontal headache

1. Sinusitis
2. Ocular causes
3. Frontal tumor
4. Migraine

136. Causes of occipital headache

1. Meningitis
2. Subarachnoid hemorrhage
3. Tension headache
4. Intracerebral hemorrhage

137. Causes of unilateral headache

1. Migraine
2. Temporal arthritis
3. Trigeminal neuralgia

138. Causes of pain in face

1. Trigeminal neuralgia
2. Postherpetic neuralgia
3. Sinusitis
4. Migraine
5. Costen's syndrome (Temporomandibular arthritis)
6. Malignancy of face/secondaries
7. Pathology in oropharynx/teeth
8. Glossopharyngeal neuralgia
9. Cavernous sinus thrombosis
10. Painful ophthalmoplegia
11. Tolosa-Hunt syndrome
12. Carotidynia

139. Causes of burning feet syndrome

1. Vitamin deficiency
2. Renal failure
3. Diabetes mellitus
4. Alcoholism
5. As a result of toxic, metabolic and inherited disorders

140. Causes of shoulder pain (Referred pain)

1. Myocardial infarction
2. Subdiaphragmatic abscess
3. Diaphragmatic pleurisy
4. Acute pancreatitis
5. Ruptured spleen
6. Some cases of appendicitis with peritonitis

141. Causes of muscle cramps (painful shortening of muscle associated with palpable knotting)

1. Idiopathic (occurs at night at rest)
2. During pregnancy
3. Unaccustomed exertion
4. Diarrhea and severe dehydration (hyponatremia, hypocalcemic, hypomagnesemia)
5. McArdle's disease
6. Uremia
7. Drugs
   - Nifedipine
   - Nicotinic acid
   - Cinetidine
   - Morphine
   - Diuretics

142. Causes of priapism

1. Chronic myeloid leukemia
2. Rabies – Furious type (due to involvement of amygdaloidal nucleus)

3. Local causes: Thrombosis
   Hemorrhage of penis
   Neoplasm
4. Sickle cell anemia
5. Paraplegia (Paraplegia inflexion)
6. High cord compression (in the cervical region)

BLOOD PRESSURE

143. Causes of orthostatic hypotension (Postural hypotension)

BP ↓ on standing

1. Intravascular volume contraction
   - Hemorrhage
   - Severe chronic anemia
   - Sodium depletion
   - Pregnancy
2. CNS lesions
   - CVA
   - Trauma
   - Infection
   - Demyelination
   - Spinal cord lesions–syingomyelia/tabes dorsalis
3. Pheochromocytoma
4. Shy-Drager syndrome
5. Aldosteronism
6. Drugs – Vasodilators
   - Nitroglycerine
   - Hydralazine
   - Minoxidil

   Other drugs:

   - Tricylicanti depressant
   - Phenothiazines

BODY DEVELOPMENT

144. Causes of kyphosis

1. Senile osteoporosis
2. Ankylosing spondylitis
3. Paget's disease
4. Acromegaly
5. Diseases of vertebra – TB vertebra → Gibbus (Pott's disease)

PARASITE

145. Parasites producing CVS disorders

1. Hydatid → Cyst, CCF, Strokes-Adams syndrome/conduction disturbances
2. Schistosomiasis → Primary pulmonary hypertension
3. Filariasis → 1. Primary pulmonary hypertension
   2. Myocarditis
4. Trypanosoma cruzi (Chaga's disease) → Myocarditis
   Arrhythmias
   RBBB
5. Trypanosomiasis (Sleeping sickness) → Myocarditis
   Pulmonary edema
   CCF
   Pericardial effusion
6. Toxoplasmosis → Myocarditis
   Pericarditis/effusion
   CCF
   Arrhythmias
   Adams-Strokes syndrome
7. Malarial parasites → Angina
   Coronary vascular occlusion
8. Leishmaniasis (Kala-azar) → CCF

9. Amoebiasis → Pericarditis, myocarditis, pericardial effusion
10. Trichinella spiralis → CCF/Arrhythmia

CIGARETTE SMOKING

146. Harmful effects of cigarette smoking (Nicotine)

CVS : Angina↑platelet adhesiveness↑atheromatosis plaque
Myocardial infarction ↑ level of carboxyl Hb
CAHD/sudden death
Coronary arterial spasm

RS : Chronic bronchitis, bronchiectasis, pulmonary emphysema
Malignancy → Squamous cell and oat cell carcinoma
Lungs, oral cavity larynx, esophagus bladder, kidney, pancreas
COPD

Vascular : TAO

GIT : Loss of appetite
Gastric ulcer
DU
Pancreatic malignancy

Others : Early menopause
Spontaneous abortion in pregnant women
Low birth weight babies
Fetal death

147. Active ingredient of tobacco is nicotine

1. A standard cigarette contains about 20 mg of nicotine
2. Smoker inhales about 2 mg of nicotine while smoking one cigarette
3. Lethal dose of oral nicotine is 1 mg/kg body weight

148. Side effects of oral contraceptives

1. Thrombophlebitis
2. Thromboembolism – pulmonary
3. Hypertension
4. Stroke
5. Myocardial infarction
6. Pulmonary hypertension

149. Hypercalcemic states

1. Primary hyperparathyroidism
2. Milk alkali syndrome
3. Hypervitaminosis D
4. Sarcoidosis
5. Hyperthyroidism
6. Cushing's syndrome
7. Neoplasm – paraneoplastic syndrome in Coburg's carcinoma
8. Multiple mycoma

150. Causes of low uric acid level in blood

1. Xanthinuria → due to deficiency of xanthers oxidase
2. Fanconi's syndrome
3. Wilson's disease

} There is disturbance in uric acid reabsorption in renal tubule

SKELETON

151. Pesplanus seen in

1. Ehlers-Danlos syndrome
2. Marfan sydrome
3. Osteogenesis imperfecta

152. Frontal baldness

1. Myotonic dystrophy
2. Progeria
3. Werner's syndrome

153. Small chin

1. Williams' syndrome
2. Turner's syndrome
3. Fetal alcohol syndrome

154. Teeth abnormalities

1. Peg teeth – Hurler's syndrome
2. Hutchinson teeth – Peg-shaped notching/incissors
3. Malformation of teeth – Williams' syndrome
4. Teeth present at birth – Ellis-van Creveld syndrome

EXAMINATION OF HEAD

155. Cause of bruit over the skull

1. Carotid cavernous fistula
2. AV fistula of cerebral vessels
3. Cerebral vascular malformation
4. Brain tumor
5. Intracranial sacular aneurysms
6. Paget's disease of bone
7. Angioma of scalp
8. Sturge-Weber syndrome
   If the carotids are occluded the bruit may be ↓ or absent
9. Carotid or aortic stenosis
10. Young children – not significant
    Bruit is very uncommon over berry aneurysm.

Bruit in CNS *Auscultation over*

1. Both temporal bones
2. On the lateral occipital region
3. Over each closed eye
4. Over mastoid abscess and jugular veins

156. Causes of involuntary movements of head

1. Old age
2. Aortic leak – DeMusset's sign

3. Parkinsonism
4. Habit spasm
5. Chorea
6. Torticollis

CHEST

157. Mantoux will be negative in

1. TB abdomen
2. Miliary TB
3. Extensive advanced PT
4. PT with viral infection like chickenpox
5. TB patients who are on immunosuppressive drugs
6. TB patients on steroid therapy
7. With other associated diseases like leukemia, lymphoma, etc.

ALCOHOL

158. Diseases in which the symptoms are more after drinking alcohol

1. Gout
2. Hodgkin's disease
3. Acute intermittent prophyria
4. Epilepsy
5. Pancreatitis
6. Migraine

159. Causes of bone pain

1. Chronic myeloid leukemia
2. Sickle cell disease
3. Myelosclerosis
4. Gout
5. Secondaries (varcinomatous infiltrations)
6. Multiple myeloma

7. Osteoporosis
8. Osteomalacia

BLOOD

160. Causes of bleeding gums

1. Leukemia – particularly monocytic type
2. Agranulocytosis
3. Thrombocytopenic states
4. Snake bite – viper
5. Vitamin C deficiency
6. Hemophilia
7. Purpura
8. Acute and chronic renal failure

LUNGS

161. Chest disorders mimicking abdominal pathology

1. Diaphragmatic pleurisy
2. Lower lobe pneumonia
3. Pericarditis
4. Pleural effusion
5. Myocardial infarction

162. Abdominal causes of tachypnea

1. Appendicitis
2. Peritonitis
3. Intestinal obstruction
4. Intra-abdominal hemorrhage

INFECTION

163. *Treponema pallidum* can be isolated

1. Ocular fluid
2. Spinal fluid

3. Liver
4. Lymph node
5. Ascending and arch of aorta

EAR

164. Causes of tinnitus

1. Mèniére's disease
2. Labyrinthritis
3. Hypertension
4. Acoustic neuroma
5. Diabetes mellitus
6. Drugs – Aspirin

GAIT

165. Conditions where toe walking is not possible

1. Parkinsonism
2. Sensory ataxia
3. Spastic hemiplegia
4. Paralysis of soleus or gastric venous
5. Cerebellar degeneration

EYE

166. Medical causes of cataract

1. Diabetes mellitus
2. Galactosamine
3. Hypoparathyroidism
4. Myotonic dystrophy
5. Marfan's syndrome
6. Mangolism
7. Homocystinuria
8. Drugs: Corticosteroids
9. Irradiation

GASTROINTESTINAL (GI) TRACT

167. Fungus affecting esophagus

1. *Candida albicans*
2. *Aspergillus*
3. *Cryptococcus*
4. *Histoplasma*

DIABETES

168. Raised glucose tolerance arise (Diabetic) seen in

1. Diabetes mellitus
2. Atherosclerosis
3. Pituitary over activity
4. Adrenal over activity
5. Liver damage

BIOCHEMISTRY

169. ↑levels of serum cholesterol

1. Nephrotic syndrome
2. Myxedema
3. Diabetes mellitus
4. Hypercholesterolemia
5. Biliary cirrhosis

170. Causes of ↑serum alkaline phosphates (Disease of bone, liver and intestine)

1. Paget's disease of bone (all disease with extensive involvement of bone producing osteoblastic activity)
2. Hereditary hyperphosphatasia
3. Liver disorders – Biliary obstruction
   Cirrhosis liver
   Secondary deposits
4. Rickets and osteomalacia

5. Fibrous dysplasia (Albright's syndrome)
6. Primary hyperparathyroidism
7. Metastatic tumor of prone producing osteoblastic activity
8. Rarely oral contraceptives by producing liver damage
9. Osteogenic sarcoma
10. Primary biliary cirrhosis
11. Hypernephroma in some cases
12. Prostatic carcinoma
13. Lymphomas
14. Infectious mononucleosis
15. Miliary TB

VOMITING

171. CNS causes of vomiting (↑ICT)

1. Meningitis
2. Encephalitis
3. Acute hydrocephalus
4. Neoplasm — Primary / Secondary
5. Acute labyrinthitis
6. Mènière's disease
7. Migraine
8. Tabetic crisis

172. CVS causes of vomiting

1. CCF
2. Posterior wall myocardial infarction
3. Drugs – Digitalis

173. Endocrine causes of vomiting

1. Diabetic acidosis
2. Adrenal insufficiency – adrenal crisis
3. Morning sickness of pregnancy

174. CNS causes of vomiting

1. Meningitis
2. Encephalitis ↑ ICT
3. Intracranial tumors
4. Hydrocephalus
5. Migraine
6. Motion sickness
7. Labyrinthitis
8. Vestibular disorder
9. Ménière's diseases

175. GIT causes of vomiting

1. Acute gastroenteritis
2. Appendicitis
3. Intestinal obstruction
4. Peritonitis
5. Biliary colic

176. Renal causes of vomiting

1. Pyelonephritis
2. Ulcerative colitis

177. Drugs producing vomiting

1. Digoxin

178. Respiratory causes of vomiting

1. Viral infections

MISCELLANEOUS

179. Causes of relative bradycardia

1. Typhoid
2. Legionnaires' disease
3. Some viral infections

180. Sudden arrest of breathing during inspiration

1. Infection of pleura
2. Diaphragmatic pathology – subdiaphragmatic abscess
3. Acute cholecystitis – Murphy's sign

181. Abdominal angina

Ischemia of abdominal viscera due to one or more regional arteries. Trial of symptoms. Postprandial pain, associated weight loss. Diarrhea may be present. Short systolic bruit and in the epigastric or umbilical regions.

182. Patients who are not advisable to fly in an aircraft (unpressurised)

1. Hemoglobin trait
2. Tension pneumothorax

183. Tumors (Primary and secondary) seen in

Primary tumors	*Secondary tumors seen in*
1. Lungs	Brain, bone, liver, adrenal, spinal cord
2. Liver	Bone (ribs, vertebra), brain, lungs
3. Kidney	Lungs, liver, bone, brain
4. Bones	Lungs
5. Thyroid	Spinal cord
6. Breast	Spinal cord
7. Esophagus	Liver, lungs, bones, kidneys, adrenals

184. Points to remember

1. To produce clinical signs, the GIT bleeding should be minimum of 500 ml of blood.
2. To demonstrate shifting dullness in abdomen, a minimum of 500 ml of fluid should be present in peritoneum.
3. To demonstrate Puddle's sign a minimum of 120 ml of fluid should be present.
4. To appreciate bladder fullness and to initiate micturition minimum of 400 ml of urine should be in the bladder.

5. To produce malena, the GIT bleeding must be minimum of 60 ml.
6. Earliest anemia is seen in soft palate.
7. Earliest jaundice seen in under surface of tongue.
8. Earliest RVF – is ↑ JVP – last to disappear is also JVP.
9. Earliest clubbing seen in index finger.
10. Clubbing is seen commonly in those fingers which are used mostly.

185.

If the secondaries are in	*Look for primary in*
Bone (Osteolytic changes)	Thyroid, kidney, lower bowl, myeloma, carcinoma, breast
Bone (Osteosclerotic or Osteoblastic changes)	Prostate, Hodgkin's disease, carcinoid syndrome
Lungs	Colon and rectum, GIT, genitourinary system and breast, renal bladder, prostate, ovary, thyroid, pancreas testes, melanoma, lungs, head and neck cancer
Liver	Lung, GIT, breast, thyroid, pancreas, melanomas, prostate, skin
Brain	Bronchus, breast, kidney, thyroid, stomach, prostate, colon, malignant, melanoma, GIT and genitourinary tract, testes, etc.
Kidney	Lungs and liver
Heart	Lungs, breast, malignant, melanoma, Hodgkin's disease, leukemia, GIT, kidney
Pericardium	Lymphomas, breast, lungs, thyroid, pancreas, melanoma, leukemias

Contd....

Contd....

If the secondaries are in	*Look for primary in*
Spinal cord	Breast, prostate, lungs, thyroid, uterus, cervix, multiple myeloma, Hodgkin's disease
Pleura (with effusion)	Lungs, breast, pancreas, stomach, arteries, ovary
Cerebellum	Colon, lungs, breast
Skin	Breast, prostate, kidney, head and neck, GI tract.

186. Causes of preventable blindness

1. Vitamin A deficiency
2. Toxic amblyopia
   - Methyl alcohol
   - Nicotine
   - Tobacco
3. Injury to eye
4. Cataract
5. Glaucoma
6. Trachoma
7. Diabetic retinopathy
8. Hypertensive retinopathy
9. Severe myopia
10. Drugs: Steroid
11. Infections → Ophthalmia neonatorium
    Herpes zoster
12. Parasitic → *Toxoplasma*
    Onchocerca volvulus
    Cestodes
13. Leprosy → Lagophthalmos – Exposure keratitis

187. Causes of herpes labialis (Herpes simplex)

1. Pneumonia
2. Malaria
3. Rickettsial fever
4. Typhoid
5. Meningococcemia
6. Smallpox
7. TB
8. Brucellosis

} RARE

188. Medical causes of epistaxis

1. Typhoid fever anterior nasal bleed/posterior nasal bleed
2. Rheumatic fever
3. Pertussis
4. Malaria
5. Hypertension
6. Bleeding diathesis
7. Leukemia
8. Snake bite – viper
9. Scurvy
10. Hyperviscosity syndrome
11. Weil's disease
12. Polycythemia vera
13. Osler-Rendu-Weber syndrome
14. Lepromatus leprosy
15. Aplastic anemia
16. Tumors of nose and pharyngeal sinuses
17. Sinusitis of ethmoidal sinuses
18. Drugs–Aspirin, Indomethacin, etc.–NSAID and anticoagulants
19. Acute and chronic renal failure

189. Onchogenic viruses

1. Hepatitis B → Hepatoma
2. Epstein-Barr virus → Burkitt's lymphoma
   Nasopharyngeal carcinoma

3. Herpes simplex 2 (HSV-2) virus → Cancer cervix

190. Causes of impaired immunological defenses (Immunosuppressive conditions)

1. High dose steroids
2. Lymphoreticular malignancy
3. Sickle cell disease
4. Alcohol abuse (ethanol)
5. Splenectomy

191. Examination of conjunctiva

1. Anemia
2. Jaundice
3. Bitot's spot
4. Telangiectases → Ataxia telangiectasia
5. Conjunctival suffusion → Leptospirosis
6. Subconjunctival hemorrhage → # face, bleeding disorders
7. Conjunctival ulcer → Behçet's syndrome
8. Blue sclera → Marfan syndrome
   Osteogenesis imperfecta

192. Xerostomia (Dry mouth) seen in

1. SLE
2. Rheumatoid arthritis
3. Scleroderma
4. Sjögren syndrome
5. Polyneuritis
6. Drugs like atropine

193. Carotinoderma

Carotene is converted into vitamin A in the liver with the assistance of thyroid hormone. So carotinoderma occurs in hepatic disease myxedema (It is yellow color of skin due to carotene) (better seen in palm and sole).

194. Criteria for sudden death

1. Natural death occurring within one hour of onset of symptoms
2. May or may not be pre-existing disease
3. Time and mode of death is unexpected. It should be:
   - Natural
   - Unexpected
   - Rapid
   - Nonmedicolegal death

195. Causes of sudden death

1. Myocardial infarction
2. MVPS
3. Athletes after severe exercise
4. Heavy cigarette smoking
5. Cardiomyopathy – HOCM dilated
6. Cardiac rupture – Rupture of ventricular aneurysm
7. Cardiac injuries
8. Tumors of heart – sarcoma
9. Myocarditis
10. Pulmonary hypertension (Primary and Secondary)
11. Pulmonary thromboembolism
12. Aortic stenosis
13. Arrhythmias

196. Hair

1. The lifespan of length hair varies from 4 months (in eyelashes and axilla) to 4 years in scalps.
2. The rate of growth of hair is about 1.5 to 2.2 mm per week.
3. Graying of hair is due to loss of melanin pigment due to reduction in the number of functioning melanocytes.

197. Sebaceous glands

1. Seen in most part of skin
2. Seen in abundance in scalp and face

3. Absent in palm and soles
4. Act on
   - Lubricant for skin and hair
   - Has some bacteriocidal action

198. Erythromelalgia

No definite cause. Painful extremities often exposed to heat. The extremities are red and warm to touch. Seen in:

- Rheumatoid arthritis
- SLE
- Diabetes mellitus
- Hypertension

This should be differentiated from painful cold exteriorities mainly seen in:

- Ischemic disease
- Neurological disorders like painful neuropathy
- Local pathology

2 Chapter Neurology

DIFFERENTIAL DIAGNOSIS IN NEUROLOGY

1. **Cranial structures that are sensitive to pain**
    1. All extracranial structures like skin, blood vessels, nerves, muscles, facial planes of scalp and neck
    2. Great venous sinuses and their tributaries
    3. Major arteries at the base of brain
    4. Part of dura mater at the base of skull
    5. Trigeminal, glossopharyngeal, vagus and first three cervical nerves.
2. **Causes of headache**
    1. Meningitis
    2. Intracranial tumor – abscess
    3. Migraine
    4. Subarachnoid hemorrhage – CVA
    5. Temporal arteritis
    6. Tic douloureux
    7. Glaucoma/refractive error
    8. Intracranial A-V malformation
    9. Drugs
        - Oral contraceptives
        - Nitrate
        - Carbon monoxide

- CO_2 by ↑ICT
- Ethanol

Withdrawal of drugs like

- Ergot
- Amphetamine
- Clonidine
- β blockers

10. RS causes: COPD
    Pneumonia, CO_2 narcosis
11. CVS causes: Infective endocarditis
    Pulmonary embolism
    CCF
12. Following LP
13. Hypoglycemia
14. Pheochromocytoma
15. Pseudotumor cerebri
16. Premenstrual headache
17. Anemia with hemoglobin <10 gm%
18. Hypertension if the diastolic BP is more than 110 mm Hg

3. Cerebral blood flow depends on

1. Stroke volume – cardiac output – BP : Shock, Hge, postural hypotension
2. Cerebrovascular resistance
   - ↑ICT
   - Hyperviscosity of blood (Polycythemia)
3. Condition of cerebral vessels
   - Atherosclerosis
   - Thrombus
   - Emboli
4. Chemicals
   - O_2 causes cerebral vasoconstriction
   - CO_2 causes cerebral vasodilatation

– Drugs—Xanthine, Aminophylline } Vaso-constriction

4. Nonmyelinated nerve fibers seen in

1. Receptors for pain
2. Postganglionic fibers of autonomic nervous system
3. Smaller axons of CNS, e.g. olfactory nerve

5. Olfactory nerve can serve the route of entry to infections like

1. Meningitis – (epidemic meningitis)
2. Encephalitis
3. Poliomyelitis

Because the olfactory nerve has meningeal coverings and the subarachnoid space is closely related to the lymphatic vessels of nasal cavity.

6. Syndromes connected with olfactory nerve

1. *Uncinate syndrome*
   - Olfactory hallucination +
   - Abnormal buccal movements +
   - Dream like state of mind lesion in primary olfactory cortex (temporal cortex)
2. *Foster Kennedy syndrome*
   - Olfactory groove meningioma (tumors of base of frontal lobe)
   - Primary optic atrophy on the affected side with contralateral papilledema
   - Anosmia and blindness on same side.

7. Syndromes associated with optic nerve

1. Foster Kennedy syndrome
2. Amaurotic familial idiocy (Tay-Sachs disease)
   - Mental deficiency
   - Blindness

- Optic atrophy
- Dark cherry-red spot in place of macula

3. Holmes-Adie syndrome
   - Slow contraction of pupils to light and on near vision
   - Slow dilatation on removing the light
4. TIC – Repetitive movement of a group of facial muscles producing movements like grimacing, winking, shoulder shrugging abolished by diverting the attention of the patient. Also disappears during sleep.

8. Testing of near vision depends upon the integrity of macular area of retina

Causes of Argyll Robertson Pupil

1. Meningovascular syphilis → small, irregular fixed pupil
2. Pinealomas
3. Diabetes mellitus } Fixed dilated pupils
4. Brainstem encephalitis
5. Alcoholic polyneuropathy
6. Peroneal muscular atrophy

Causes of Small Pupils

1. In children
2. In old age (Senile miosis)
3. Neurosyphilis (Argyll Robertson pupil)
4. Poisons – Organophosphorus
5. Drugs: Pilocarpine
   Phenobarbitone
   Opium derivatives
   Physostigmine
6. Horner's syndrome
7. Pontine hemorrhage
8. Lateral medullary infarction

Causes of Dilated Pupils

1. Third nerve palsy → not reacting
2. Holmes Adie pupil
3. Cerebral death → not reacting
4. Drugs: Atropine, glutethimide, alcohol, amphetamine
5. Tentorial herniation of same side
6. Emotional conditions
7. Immediately after fits – not reacting

Causes of Unequal Pupils

1. Tabes dorsalis
2. Syphilic – Meningitis
3. Trigeminal neuralgia
4. Space occupying leison
5. Aortic aneurysm
6. Carotid aneurysm
7. Adie's pupil

9.

S.No.	*Argyll Robertson pupil*		*Holmes Adie pupil*
1.	Involvement	Usually bilateral	Usually unilateral
2.	Pupils	Pupils small and irregular	Pupils large and regular
3.	Ptosis	Ptosis (+)	No ptosis
4.	Reaction to light	Does not react to light	May react to light if light is exposed for long period
5.	Drug effect	Atropine has no local effect on pupil	Pupil constricts on instillation of methacholine
6.	Level of lesion	Pathology (Lesion) in periaqueductal area	Lesion is ciliary ganglion

10. Causes of Horner's syndrome

1. Hemisphere lesions (Cortical lesions)	– Massive infarction – Any pathology of entire hemisphere
2. Brainstem lesions	– Vascular lesion – Pontine glioma – Brainstem encephalitis – Multiple sclerosis
3. Cervical cord lesions	– Syringomyelia – Cord glioma – Ependymomas
4. D1 root lesions	– Pan coast tumor – Benign and malignant apical lesions of lungs and pleura – Cervical rib – Klumpke's paralysis
5. Sympathetic chain (in the neck)	– Neoplastic infiltration – Thyroid, laryngeal surgery – Cervical lymphadenopathy
6. Miscellaneous	– Migraine – Congenital

11. Prediction of lesions in

1. Cervical cord	– Hematomyelia
2. Thoracic cord	– Metastasis in thoracic vertebra – TB – Epidural abscess – Spinal AV malformation
3. Lumbar cord	– Spinal AV malformation

12. Spinal cord

→ Sensation carried in the lateral column:

1. Pain 2. Temperature

→ Sensation carried in the anterior column:
1. Light touch 2. Pressure

→ Sensation carried in the posterior column:
1. Tactile localization 2. Two point discrimination
3. Joint sense 4. Vibration sense

13. Ascending tracts

S.No	*Column*	*Sensation*
1.	Anterior funiculus	
	Anterior spinothalamic tract	Light touch, pressure
2.	Lateral funiculus	
	1. Lateral spinothalamic tract	Pain, temperature
	2. Anterior spinocerebellar tract	Joint sense from upper and lower links
	3. Posterior spinocerebellar tract	Joint sense from trunk and lower limb (unconscious activity sends to cerebellum)
	4. Spinotectal tract	Provides afferent information for spirn visual reflex
	5. Reticulospinal tract	Forms afferent pathway for reticular formation
	6. Lissaner's tract	
	7. Olivospinal tract	Sensation from cutaneous venous and proprioceptive organs
3.	Posterior funiculus	
	Fasciculus gracilis }	Tactile localization
	Fasciculus cuneatus }	Two point discrimination Joint sense → Conscious activity sends to cerebral cortex
		Vibration sense

14. Descending tracts

Column	*Fibers (Function)*
Anterior funiculus	
1. Anterior pyramidal tract	Maintains posture in response to visual stimuli
2. Tectospinal tract	Facilitates exterior (acute gravity) muscles and inhibits the flexor muscles
3. Vestibulospinal	Facilitate or inhibit alpha and gamma neurons
– Medial	(so acts on voluntary or reflex motor activity)
– Lateral	controls muscle tone.
4. Reticulospinal (from pons) (up to cervical region only)	
Lateral funiculus	
1. Lateral pyramidal tract	Facilitates the activity of flexor muscles and
2. Rubrospinal tract	inhibits the extensor (antegravity muscles)
3. Olivospinal tract	Influences the muscular activity
4. Reticulospinal tract (from medulla)	Same function as seen in anterior column

15. Tracts that did not descend completely in the spinal cord

1. Uncrossed pyramidal tract ends at mid-thoracic levels
2. Olivospinal tract – ends the cervical (upper) level
3. Reticulospinal tract (up to cervical region only)

16. Functions of dominant hemisphere

1. Controls speech
2. Controls handedness
3. Controls perception of language
4. Controls spatial judgment

Dominant hemisphere becomes fixed after 10th year of life. In newborn infants both the hemispheres are equal. So change of handedness is possible in childhood and not possible after 10th year of life.

Vascular insufficiency for 5–10 seconds can cause loss of consciousness; whereas loss of blood supply for 3–8 minutes can cause irreversible brain damage.

Mitosis is absent in CNS.

17. Mononeuropathy multiplex (multifocal mononeuropathy – involvement of several isolated nerves)

Causes

1. Vasculitis
2. Diabetes mellitus
3. Polyarteritis nodosa
4. Leprosy
5. Lyme disease
6. Tumor/malignancy
7. Trauma
8. Sarcoidosis
9. Rheumatoid arthritis
10. Amyloidosis

- Atrophy (amyotrophy) is defined as diminution in size of muscle or wasting of muscle. It is characterized by changes in shape, contour, volumes or bulk of the muscles.
- Coma (Greek Koma = Deep sleep). Defined as absence of any psychologically understandable response to external stimuli or inner need.
- Consciousness has two components. Consciousness is defined as awareness of one's own self and his surroundings.
- Content
- Arousal

Content: Controlled by cerebral hemisphere
Arousal: Controlled by reticular formation

- Metabolic disturbances causes lesions mainly in cortex, e.g. liver, kidney, lungs failure
- Structural brain lesions cause damage to reticular formation
- Pupils are normally not affected in coma due to metabolic causes. But may be affected in structural lesions
- Ocular reflexes that help in assessing the causes for coma
  1. Ocular cephalic reflex
  2. Ocular vestibular reflex
  3. Ciliospinal reflex
  4. Corneal reflex
- Sleep is a state of physical and mental inactivity from which one can be aroused to full consciousness by deep stimuli.

18. Functions of neurons

1. Receives
2. Conducts and
3. Transmits

} Impulses < Motor / Sensory

19. Types of glial cells

1. Astrocytes
2. Oligodendrocytes
3. Microglia
4. Ependymal cells

Ratio of nervous to glial cells are 1: 10

20. Functions of glial cells

1. Mechanical support to neurons
2. Produces myelin sheath

3. Acts as insulators for neurons
4. Acts as CNS phagocytic defense mechanism
5. Modifies electrical activities in neurons
6. Regulates the metabolism of neurons

21.

S.No.	*Neurons*	*Glial cells*
1. Quantity	Small in number (Less)	More in number (Ratio is 10: 1)
2. Size	Larger in size	Smaller in size
3. Action	Excitable	Non-excitable
4. Axons	Have axons	Do not have axons
5. Connective	Has synoptic connections	No

Receptors are biological transducer which pick up one form of stimulus and transmits them to higher center.

Synapse is the site where two or more neurons come into close contact anatomically and take part in the conduction of impulses functionally.

Tremor is defined as involuntary contraction and relaxation of muscle groups producing oscillating movements at one or more joints.

Stroke is defined as focal brain dysfunction due to ischemia.

Dementia is defined as progressive decline in cognitive and intellectual functions in the presence of clear sensorium. It is an acquired disorder and not a congenital one and also failing memory.

22. Frontal lobe:

Testing of frontal lobe:
1. Snout reflex
2. Sucking reflex
3. Grasp reflex
4. Palmomental reflex

1. Controls judgment
2. Controls emotional feelings

3. Controls personality
4. Controls social behavior
5. Becomes careless about dress and appearance
6. Micturates in public because micturition center is frontal lobe
7. Memory impairment
8. Intellectual decline
9. Uses bad language in public place
10. Dementia
11. Irritative lesions of frontal eye field produces eye movements to opposite side. Destructive lesions to the same side.
12. Responsible for voluntary eye movements (Saccadic movement)
13. Important areas in frontal lobe
    a. Motor area 4 and 6
    b. Frontal eye field area 8
    c. Micturition center and defecation center
    d. Motor speech area 44 and 45
    e. Center for saccadic eye movements is in opposite frontal lobe

Location of frontal lobe

- Anterior to central succus (Rolandic fissure)
- Superior to lateral sulcus
  Central sulcus (Rolandic fissure)
  Lateral sulcus (Sylvius fissure)

23. Parietal lobe

- Location: In between central sulcus and parieto-occipital sulcus above lateral ankles parieto-occipital sulcus
- Important areas: Sensory cortex area 1, 2 and 3
- Dominant hemisphere involvement causes speech disturbances – dysphasia
- Non-dominant hemisphere causes dysphasia
- Cortical sensory loss

24. Occipital lobe

- Posteriorly situated behind parieto-occipital sulcus
- Important areas: Visual area 17, 18 and 19
- Lesion causes visual disturbances
- Responsible for smooth pursuit movements of eye (Eyes moving with the object).

25. Temporal lobe

- Location below lateral sulcus
- Important areas
- Lesions
  1. Personality changes
  2. Memory impairment
  3. Psychomotor seizure
  4. Upper visual field pathway
  5. Auditory disability
  6. Vestibular dysfunction
  7. Emotional fiber involvement in 7th nerve lesion
  8. Memory deficit
  9. Wernicke's aphasia
- O_2 utilization of brain is 50 ml/mt
- The central blood flow is 700-750 ml/mt

26. Neurological causes for syncope

1. Postural hypotension
2. Cough syncope
3. Micturition syncope

27. Etiological factors for neurological disorders (VITAMINS)

V – Vascular (Ischemia/embolus/A-V Malformation/vasculitis/aneurysms sinuses thrombosis, etc.
I – Infection
T – Trauma
A – Autoimmune, alcohol

M – Metabolic
I – Iatrogenic
N – Nutritional, neoplastic
S – Psychogenic, seizure, structural abnormalities

28. Causes of muscle weakness

Acute:
1. Poliomyelitis
2. Polyneuritis
3. Polymyositis
4. Dermatomyositis
5. Trauma

Chronic:
1. Progressive muscular dystrophy
2. Chronic polymyositis
3. Chronic nutritional neuropathy
4. Diabetic neuropathy
5. Multiple sclerosis

Episodic:
1. Myasthenia gravis
2. Hyperkalemia paralysis
3. Hypokalemia paralysis
4. Familial periodic paralysis

29. Causes of postural (orthostatic) hypotension

1. Tabes dorsalis
2. Syringomyelia
3. Diabetic neuropathy
4. Alcoholic neuropathy
5. Peripheral neuritis
6. Polyphagia – Shy-Drager syndrome
7. Amyloidosis
8. Parkinsonism

30. Causes of temporary ophthalmoplegia

1. Migraine
2. Temporal arteritis
3. Myasthenia gravis

31. Correctable causes of dementia

1. Frontal lobe tumors
2. Subdural hematoma
3. Pellagra
4. Vitamin B_{12} deficiency
5. Folate deficiency
6. B_1 deficiency
7. Metabolic causes
   a. Hepatic dysfunction
   b. Renal dysfunction – uremia
   c. Hypoxia – Addison's disease
   d. Hypothyroidism – panhypopituitarism
   e. Cushing's syndrome
8. Syphilis
9. Drugs: Phenobarbitone, methyldopa, β blockers
10. Toxins: Bromides, lead, alcohol, heavy metals, arsenic, Hg, carbon monoxide
11. Meningitis
12. Normal pressure hydrocephalus
13. HIV infection
14. Head injury

32. Uncorrectable causes of dementia

1. Pre-dementia <65 years } Alzheimer's
2. Senile >65 years } disease
3. Multiple strokes – Multi-infarction syndrome
4. Huntington's chorea
5. Creutzfeld Jakob's disease
6. Parkinsonism
7. Pick's disease

33. Clinical testing for dementia

1. Grasp reflex
2. Snout reflex

3. Sucking reflex
4. Glabellar tap

34. Intelligence

Ability to act purposefully think rationally and deal effectively with his environment.

It is a power of reasoning and adjustment to known situation

35. Intelligence quotient

		Mental age / Chronological age
Normal		90–110 IQ
Below	70	→ Feeble minded
	50 – 70	→ Moron
	25 – 50	→ Imbecile
Below	25	Idiocy

36. Facial expression changes in

1. Parkinsonism
2. Dementia
3. Alzheimer's disease
4. Pseudobulbar palsy
5. Frontal lobe tumor
6. Dystrophic myotonia

- Testing of cold, the temperature of cold water should be 41 to 50°F (5 to 10°C)
- For testing water, the temperature of water should be 104 to 113°F (40 to 45°C)
- Test from lesser sensitivity area to greater sensitivity area
- If there is hyperalgesia area test from normal area to hyperalgesia area
- A normal individual should to able to differentiate the temperature between 2 to 5°C
- *Joint position*

- Joint movement ranging up to 1 mm will be appreciated in UL(Fingers) and 3–4 mm in LL (Toes)

Pain:	↑ – Hyperalgesia
	↓ – Hypoalgesia
	O – Analgesia
Temperature:	↑ Thermohyperesthesia
	↓ Thermohypoesthesia
Touch:	↑ Hyperesthesia
	↓ Hypoesthesia
	O – Anesthesia

37. Paresthesia

Presence of abnormal sensations like feeling of cold, warm, numbness, tingling, crawling, etc. in the absence of any stimulation.

38. Dermatoma

It is defined as a skin area innervated by a specific segment of the cord or their roots or dorsal root ganglia.

39. Topognosia (or topesthesia)

Ability to localize tactile sensation.

40. Two point discrimination

Normally two points of stimuli of touch is appreciated in the following areas as described.

1. 1 mm in the tip of the tongue
2. 2–4 mm in the finger tips
3. 4–6 mm in the dorsum of finger
4. 8–12 mm in the palm
5. 20–30 mm in the dorsum of hand
6. Up to 5 cm in the dorsum of foot

41. Graphesthesia

- Letters or numbers of 1 mm height is written on finger pads
- Letters or numbers of 4 mm height in forearm and legs

42. Cortical sensations are

1. Tactile localization
2. Two point discrimination
3. Stereognosis
4. Graphesthesia
5. Sensory in attention
    - In peripheral neuritis the first sensory loss found will be vibration sense (i.e. vibration will be first to go in peripheral neuritis.)

43. Causes of fasciculation

a. *Neurological*
- Anterior/horn cell disease
- Amyotrophic lateral sclerosis
- Progressive bulbar palsy
- Progressive muscular atrophy
- Syringomyelia
- Spinal cord tumors
- Rarely anterior nerve root involvement

b. *Non-neurological causes*
- OPC poisoning
- Severe dehydration
- Electrolyte imbalance
- Drugs – neostigmine
- Benign – in normal individuals

44. Causes of muscle cramps

- Tetany
- Hypomagnesemia
- Dehydration
- Excessive sweating – salt loss

- Metabolic disorders
  Uremia
  After dialysis
  Hypothyroidism
- In normal individuals

45. Causes of nocturnal muscle pain

1. Rheumatoid arthritis
2. Ankylosing spondylitis
3. Polymyalgia rheumatica
4. Osteoarthritis
5. Gout
6. Carpal-tunnel syndrome
7. Metabolic bone disease

46. Motor system: Functions of motor system

1. Move own body in space
2. Move one part of the body in relation to another part of the body
3. Helps to maintain posture equilibrium, etc.
4. A motor neuron from anterior horn goes from the anterior horn cell and supplies the corresponding muscle fibers through myoneural junctions. One such neuron innervates about 50 to 200 individual muscle fibers. But, this number varies from muscle-to-muscle whereas the muscles which function with minor movements (discrete movements) such as the extraocular muscles the ratio is much smaller, i.e. the nerve fibers supply less numbers of muscle fibres. Other example is small muscles of hand.

47. Motor unit

A motor unit is defined as the single alpha motor neuron and the muscle fibers that it innervates.

48. The anterior horn cells are controlled by

1. Corticospinal tract
2. Rubrospinal tract
3. Tectospinal tract
4. Vestibulospinal tract
5. Reticulospinal
6. Intersegmental and
7. Intrasegmental } Tracts
8. A muscle may get its motor connections from more than one segment of anterior horn cells.
9. One segment of anterior horn cells may innervate more than one muscle.

49. Features of LMN lesion

1. Hypotonia
2. Loss of power in affected muscles – Flaccid muscles
3. Atrophy
4. The atrophy may be completed in about 3 months time if the lesions is 70–80%.
5. Contracture may develop either
   a. Due to action of antagonistic muscles (or)
   b. Any fibrosis of affected muscles.
6. Fasciculation's may be seen.
7. EMG may show fibrillation potentials after 2–3 weeks of paralysis.
8. DTR absent (in that segment).
9. Trophic changes – in skin, nail, hair, may be seen.
10. No sensory changes if motor unit alone is affected.

50. Anterior horn cell diseases

1. Poliomyelitis
2. Progressive spinal muscular atrophy
3. Progressive bulbar palsy
4. Amyotrophic lateral sclerosis

5. Syringomyelia
6. Intramedullary neoplasm
7. Peroneal muscular atrophy
8. MND
9. Hematomyelia
10. Acute porphyria
11. Anterior spinal artery occlusion

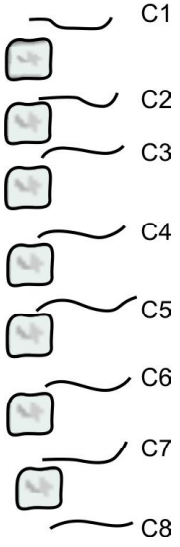
51. Diseases affecting the myoneural junction

1. Myasthenia gravis
2. Familial periodic paralysis

52. Myotome

Group of muscles supplied by a single anterior nerve root.

53. The first seven spinal nerves (C1–C7) comes out above the corresponding vertebral body. The C8 exists from below the body of C7 vertebra.



54. Electrolyte abnormalities that can cause muscle weakness

1. Hypokalemia (Periodic paralysis)
2. Hyperkalemia
3. Hypomagnesemia
4. Hypocalcemia

55. Causes of spinal nerve root lesions

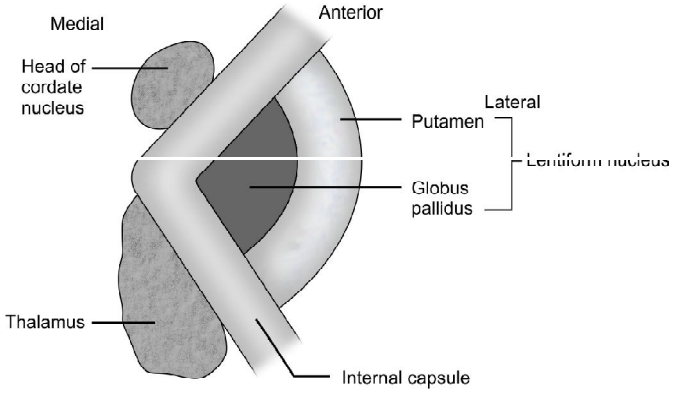
1. Injury – Penetrating bullet injuries (direct)
2. Disk prolapse
3. Hypertrophied ligamentum flavum
4. Primary tumors
5. Secondary deposits
6. Spinal traction (indirect injury)
7. Guillain-Barrè syndrome
8. Herpes zoster
9. Lyme disease
10. Diabetes mellitus

56. Functions of extrapyramidal system

1. Helps in integrated motor activity
2. Controls skilled movements, e.g. threading the needle
3. Helps in regulation of tone
4. Helps in regulation of posture
5. Controls automatic associated movements, e.g. swinging of arms while walking.
6. Controls abnormal involuntary movements
7. Controls emotional expressions movements

57. Structures that constitute the extrapyramidal system

1. Putamen
2. Globus pallidus
3. Cordate nucleus
4. Subthalamic nuclei
5. Red nucleus
6. Substantia nigra



Cordate nucleus + lentiform nucleus → corpus striatum
The extrapyramidal system is very well developed in lower animals – particularly in birds.

58. Gross abnormalities of extrapyramidal system

1. Disturbance in tone
2. Derangement of movement
3. Loss of associated or automatic movement

59. Causes of chorea

1. Rheumatic fever
2. Huntington's chorea
3. Chorea gravidarum
4. SLE
5. Hyperthyroidism
6. Oral contraceptives

60. Tone in extrapyramidal lesion

1. Cogwheel rigidity – Most affected muscles are:
   a. Muscles of neck and trunk
   b. Flexors of extremities
2. Lead pipe rigidity (Plastic rigidity)

61. Causes of athetosis

1. Wilson's disease
2. Kernicterus
3. Perinatal anoxia
4. Head injury
5. Vascular lesions

62. Reflexes associated with extrapyramidal syndromes (Parkinsonism)

1. Glabellar reflex
2. Orbicularis oris reflex (Percussion over upper lip causes contraction of lip muscles. It is not seen in normal individuals. But seen in parkinsonism and in infant up to 1 year of age.
   a. Afferent: 5th nerve (strong)
   b. Efferent: 7th nerve

63. UMN

- One single pyramidal fiber may innervate more than one neuron (anterior horn cell) in the spinal cord.
- *Functions of pyramidal tract*
  1. Initiating and maintaining motor activity.
  2. Performs skilled movements.
  3. Integrates motor activity, i.e. when agonists are contracting the antagonists are made to relax.
  4. Has inhibitory control over lower centers like anterior cell of spinal cord. For example, in pyramidal lesion there is no control over spinal level and the spinal level responds to all stimuli. So, there is exaggerated, excessive and unbalanced response.

64. Features of UMN lesion

1. Hypertonia: Clasp-knife spasticity more seen in flexors in upper limbs and in extension of lower limb.
2. Paralysis is general. No individual muscles are affected. But muscle groups are affected.

3. Atrophy only in late stages and that too disuse atrophy only.
4. DTR exaggerated.
5. Superficial reflexes are diminished or absent.
6. No fasciculations.
7. No trophic changes. May be present rarely.
8. In hemiplegia, the weakness is more in extensors in upper limbs and flexors in lower limbs. So, the position in hemiplegia will be:
   a. Arms adducted flexion and internal rotation at shoulder; flexion and pronation at elbow and flexion of wrist and fingers.
   b. In the lower limb, leg is extended, adducted at hip and extended at knee and ankles; there is plantar flexion and inversion of foot and toes.
9. Tone is ↑ more in flexors of upper limbs and extensors of lower limbs.

65. Cerebellar sign in upper limb

1. Coordination
   – Finger nose
   – Finger to finger nose
   – Finger to finger
2. Intention tremor
3. Involuntary movements
4. Dysdiadochokinesia
5. Rebound phenomena
6. Macrographia
7. Appreciating normal weight as less weight
8. Outstretched hand to normal position – moving and difficulty

66. Disorders of cerebellum

1. Cerebellitis – virus – chickenpox
2. Alcohol

3. Drugs – Phenytoin
   a. Primidone
   b. Carbon monoxide
4. Spinocerebellar degeneration
5. Ramsay Hunt syndrome
6. Tumors – Astrocytoma
7. Secondaries – Primary from lungs, breast, colon
8. Congenital (Agenesis, hypoplasia, etc.)
9. CV anomaly
10. CP angle tumor
11. Trauma
12. Vascular
    - PICA
    - AICA
    - Vertebral artery
    - Superior cerebellar artery
13. Degenerative
14. Toxin ———
15. Infections

67. Cerebellum

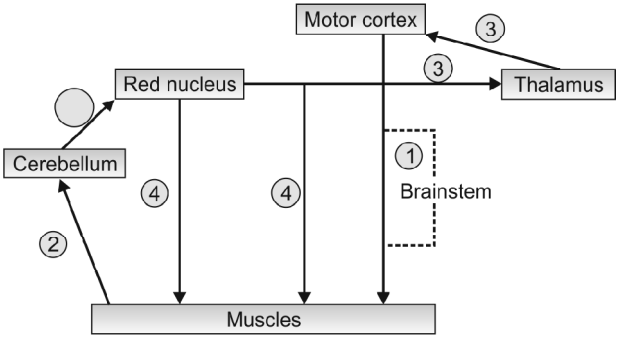
Cerebellar fit: It is a rigid tonic convulsion sometimes seen in cerebellar disease.

Functions

1. Helps in maintaining the tone of muscle.
2. Helps in maintaining the posture and equilibrium.
3. Helps in coordination of movements especially skilled voluntary movements.

68.

69. Pathways for cerebellum control of voluntary movements



1. → Pyramidal tract
2. → Spinocerebellar tract
3. → Dentatorubrothalamic cortical tract
4. → Reticulospinal and rubrospinal tract

70. TONE is the partial ill-sustained contraction present in all skeletal muscles due to constant flow of impulses from the anterior horn cells

- It helps to maintain the body posture and movement of limbs in relation to one another.
- It is beneficial
- It is more in antigravity muscles, i.e. the muscles that maintain the body in erect postures. These muscles are flexors in upper limbs and extensors in the lower limbs.
- The tone of muscles is dependent on (are controlled by):
  - Muscles
  - Myoneural junction
  - Peripheral nerves
  - Anterior horn cells
  - Pyramidal tract
  - Extrapyramidal system
  - Cerebellum
  - Motor cortex, etc.

- For normal motor activity is necessary to
  - Action of agonist
  - Opposite action by antagonist
  - Synergestics
  - Fixators
- To test tone
  - Patient should be completely relaxed
  - Passively stretch the muscle and feel the resistance offered while passively stretching the muscle.
- Temperature can alter the tone – cooling ↑ and warmth (heat) ↓ the tone
- Tone is difficult to examine in
  - Newborn
  - Tensed individuals
  - Emotional states
- Tone is better examined in limbs and difficult to test in trunk muscles.
- While testing tone patient apparently opposes your attempts to move the limbs. It is called PARATONIA (OR) JAGENHALTEN.
- Patient at times fails to relax his muscle while testing. At these times divert his attention by conversing with him or ask him to count down from 100.

71.

S. No.	*Atrophy*	*Dystrophy*
1. History	No family history	+
2. Onset	Occurs late in life	In childhood
3. Muscles	Affects distal muscles	Proximal muscles
4. Involuntary movements	Fasciculation's +	—
5. Spasticity	May show spasticity	Not so
6. Size	Defined as wasting or diminishing in the size of the muscle	—

72. Peripheral nerves that can be palpated are

1. Greater auricular nerve
2. Ulnar nerve
3. Lateral popliteal nerve
4. Radial nerve
5. Superficial peroneal nerve
6. Posterior tibial nerve

73. Peripheral nerve thickening seen in

1. Hansen's disease
2. Chronic Guillain-Barrè syndrome
3. Refsum disease
4. Multiple neurofibroma
5. Hypertrophic polyneuritis
6. Some cases of peroneal muscular atrophy
7. Acromegaly
8. Amyloidosis
9. Charcot-Marie-Tooth disease – Hereditary motor sensory neuropathy typè I and III
10. Dijerine-Sottas syndrome

74. Causes of recurrent motor weakness

1. Hyperkalemic periodic paralysis
2. Hypokalemic periodic paralysis
3. Normokalemic periodic paralysis
4. Myasthenia gravis

75. Disorders where UMN and LMN lesions are seen

1. Motor neuron disease
2. Cord compression
3. Cervical spondylitis
4. Arachnoiditis
5. Brainstem lesions with crossed hemiplegia

76. Causes of extensor plantar with hyporeflexia or areflexia

1. Friedreich's ataxia
2. Subacute combined degeneration
3. Taboparesis
4. Spinal shock period of pyramidal lesion

77.

Disease	*Lesion at*
1. Chorea	Caudate nucleus
2. Hemiballismus	Opposite subthalamic nucleus
3. Athetosis	Putamen (outer segment)
4. Dystonia	Putamen
5. Tremor	
a. Intention's tremor	– Cerebellum
b. Static tremor	– Parkinsonism
c. Action tremor	– Cerebellum Anxiety state

78. Problem oriented medicine

1. Decorticate posture	– Bilateral – Hemispherical lesion – Lesion, brainstem is normal
2. Decerebrate posture	– Dysfunction of midbrain or upper pons

In tentorial herniation initially there is decorticate posture and then goes to decerebrate posture.

79. Causes of mutism

1. Damage to Braca's area
2. Damage to supplementary motor area
3. Bilateral damage to reticular formation of mesencephalon (Midbrain) (akinetic mute)
4. Severe pseudobulbar palsy
5. Bilateral thalamic damage
6. Bilateral pharyngeal or vocal cord paralysis
7. Acute cerebellar damage

80. Ataxia is defined as incoordination due to errors in rate, range, force and direction of movement.

81. Signs of papilledema (Early stage)

1. Hyperemic disk
2. Blurring of disk margin
3. Filling of physiological cup

82. Eye signs in cerebellar diseases

1. Nystagmus
2. Ocular dysmetria
3. Ocular flutter
4. Ocular bobbing
5. Opsoclonus
6. Skew deviation – affected eye is donor and medially and normal eye inward and outward
7. Paresis of conjugate gaze
8. Irregular tracking

83. In leprosy pain and temp is lost early than touch

The nerves to be palpated are:

a. Greater auricular nerve with the head turned to opposite side
b. Ulnar nerve
c. Lateral popliteal nerve
d. Posterior tibial nerve

84. Abnormal dopamine metabolism seen in

1. Parkinsonism
2. Torsion dystonia
3. Huntington's chorea

85. Causes of trismus (lock jaw)

1. Tonic spasm of muscles of mastication
2. Rabies
3. Tetany

4. Tetanus
5. Epilepsy
6. Hysteria
7. Polymyositis
8. Trauma to muscles of mastication
9. Nemaline myopathy
    a. *Cruciate hemiplegia:* Opposite upper limb weakness with same side lower limb weakness.
    b. *Paraplegia:* Paralysis of both lower limbs
    c. *Quadriplegia (Tetraplegia):* All four limbs are affected
    d. *Diplegia:* Symmetrical weakness of all four limbs, affecting lower limbs more than the upper limbs and occurring in children with cerebral palsy is often called diplegia.
    e. *Hemiplegia:* One-half of the body is paralyzed
    f. *Monoplegia:* One limb is paralyzed
    g. *Hemiplegia alternans (crossed paralysis):* Paralysis of one or more ipsilateral cranial nerves with contralateral paralysis of arm and leg.

86. Pyramidal tract

Functions

a. Concerned with
    - Voluntary
    - Skilled and
    - Discrete movements
b. Has inhibitory control over lower centers
c. UMN fibers from both hemispheres innervate the muscles of:
    - Upper part of face
    - Jaw
    - Neck and
    - Trunk

    Presuming these movements in hemiplegia.

87. In pyramidal lesion

a. The tremer and more skilled movements suffer more than gross and less skilled movements.
b. Movements most recently acquired in the process of evolution are first to be lost in pyramidal lesion, etc. the "precision grips", i.e. oppositions of thumb and the individual fingers is most affected (This movements is not seen in primates). Whereas the power grips produced by finger flexion is relatively unaffected.
c. A thumb movement in isolation is difficult. Normally, when proximal phalanges are flexed against resistance, the thumb is abducted and extended. Whereas in pyramidal lesion, the thumb is adducted and flexed (Wattenberg's sign).
d. Bilateral representation.
e. In upper limb the tone is ↑ in adductors, internal rotators of shoulder; flexors of elbow, wrist and fingers and pronators of forearm, than the antagonistic muscles. In lower limb, tone is ↑ in adductors of limbs, extensors of limbs, knee and plantar flexors of foot and toes. In later stages contractures develop in spastic muscles.
f. The deep tendon reflexes are exaggerated once the spinal shock stage passes off.
g. Abdominal reflexes and cremastric reflexes are diminished or lost.
h. Clonus occurs in severe lesions – vibrating feet.
i. Since the (Pyramidal) fibers occupy the pyramids in the medulla they are called pyramidal tract. *Not* because the fiber arise from the pyramidal cells in the motor cortex.
j. One single pyramidal fiber innervates more than one neuron (anterior horn cell) in the spinal cord and probably some innervate many.
k. In pyramidal lesion, the extensors in the arm and flexors in the LL are weak.

l. Symptoms occur early in pyramidal lesion than the signs. In LMN lesions the signs occur early than the symptoms.
m. It is easier to detect hypertonia in UL than in LL.

88. In LMN lesion

- Lower motor neuron (LMN) is otherwise described as primary motor neuron
- In lower motor neuron lesion, the 70–80% of muscle atrophy takes place within three months time
- After this period – atrophy is compensated by fibrous tissue and later contracture develops. Action of antagonistic muscle (which is unopposed) also enhances contracture
- Contracture leads to deformity
- Fibrillations in LMN lesions can be made out up to 14–21 days in EMG
- In LMN lesions one can demonstrate
  - Absent reflex
  - Trophic changes in the skin, nails, hair and bone
  - Abnormal vasomotor phenomena.
- No sensory change can be demonstrated if the nerve affected is purely motor
- In LMN lesions muscle atrophy starts even before paralysis or areflexia develops.

89. Muscle becomes weak after exercise, but improves after rest

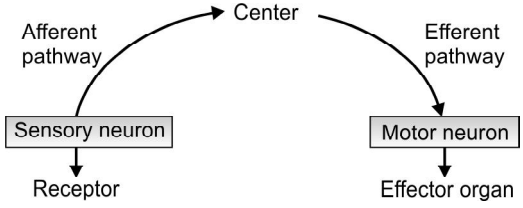
1. Myasthenia gravis
2. Metabolic muscle disorder
3. Non-specific muscle disease
4. Normal individual

90. Causes of myotonia

1. Myotonia dystrophy
2. Hypothyroidism – pseudomyotonia
3. Hyperkalemia periodic paralysis

91. Reflexes

- It is defined as a form of involuntary response to a stimulus.
- Components of reflex are:



Components are:

1. Receptor
2. Afferent pathway
3. Center
4. Efferent pathway
5. Effector organ

- Receptor may be:
  - Cutaneous end organ
  - Special sense organ
  - Muscle spindle

  The receptor is a biological transducer, which pile up one form of stimulus and transmits them to higher center.
- Afferent pathway: It is a sensory neuron transmitting impulse through a peripheral nerve.
- Center: Receives impulses and sends commands to effect or organ through efferent pathway.
- Efferent pathway is a motor neuron.
- The effector organ would be a muscle or gland.
- The stimulus may be a
  - Prick
  - Touch or
  - Sudden stretching of a muscle

- The response may be
  - Muscle contraction
  - Secretion (Glandular)
- The deep tendon reflexes are monosynaptic, i.e. it has two narrows with one synapse in between them.

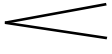
92. Classification of reflexes

1. Superficial reflexes
2. Deep tendon reflexes (Myotatic reflex)
3. Visceral reflexes (Organic reflex)

93. Pseudoreflex

They are responses of irritable muscle tissue to direct stimulation. For example, myxedema.

94. Superficial reflexes



- Mucous membrane reflexes
  a. Corneal reflex
  b. Conjunctival reflex
  c. Gag (Pharyngeal reflex)
  d. Palatal reflex (Valvular reflex)
  e. Sneeze reflex
- Skin reflexes
  a. Upper abdominal
  b. Lower abdominal
  c. Cremastric reflex
  d. Anal reflex
  e. Bulbocavernous
  f. Scapular
  g. Plantar
  h. Gluteal

95. Deep tendon reflexes

1. Biceps jerk
2. Triceps jerk
3. Jaw jerk
4. Supinator
5. Knee jerk
6. Ankle jerk

96. Visceral reflexes

1. Pupillary reflexes
   a. Light reflex — Direct / Indirect
   b. Bulbocavernous reflex
   c. Mass reflex
   d. Carotid sinus reflex
   e. Oculocardiac reflex

97. Causes of hyperreflexia

The reflex may be normal or ↑ even though tone is ↓

1. Pyramidal lesion – early stage
2. Myasthenia gravis
3. Strychnine poisoning
4. After violent exercise
5. Emotionally tense individual
6. Anxiety state
7. Frightness

98. Causes of hyporeflexia

1. Lesions in sensory nerve – polyneuritis
2. Sensory root lesion – tabes dorsalis
3. Anterior horn cell disease
   a. Poliomyelitis
   b. Spinal muscular atrophy
4. Anterior root – spinal compression
5. Peripheral motor nerve – trauma

6. Terminal nerve endings – polyneuritis
7. Muscle disorders – myopathy/periodic paralysis
8. Spinal shock period in pyramidal lesion
9. Deep coma
10. Late stages of perineal muscular atrophy
11. Friedreich's
12. Electrolytes imbalance
    a. Normokalemic
    b. Hypokalemia } Periodic paralysis
    c. Hyperkalemia
13. Immediately after epilepsy (grandmal)

99. ↓ Or absence of ankle jerk

1. Cauda equina lesion segmental lesion at
2. Subacute combined degeneration
3. Diabetes mellitus
4. Myelodysplasia
5. Spina bifida
6. Peripheral neuritis
7. Old age

100. Radial inversion

Lesion at C4 and C5

Seen in
1. Cervical disk disease
2. Syringomyelia
3. Cervical trauma
4. Cervical neoplasm

101. ↓Plantar: Normal response.

1. LMN lesion of corresponding segment absent plantar
2. Late stages of peroneal muscular atrophy

102. Signs to elicit plantar responses

1. Babinski's sign
2. Chaddock's toe sign

3. Gordon's leg sign
4. Oppenheim sign
5. Gonda reflex
6. Rossolimo's sign

103.

S.No.	*Anterior horn cell disease*	*Myopathy*
1.	Asymmetry	Bil ateralsymmetrical
2.	Muscle atrophy +	Hypertrophy (pseudo)
3.	Fasciculations +	Absent
4.	Normal mentation	Fall in mentation may be seen
5.	No cardiomyopathy	Cardiomyopathy
6.	Distal muscle involvement	Proximal involvement
7.	Genetics (-)	+
8.	Contraceptive pills	+
9.	Cranial nerves may be involved	Not so
10.	Enzymes normal	↑
11.	EMG – Neurogenic atrophy	Myogenic atrophy
12.	Power better	Disproportionate
13.	Plantar ↑ or ↓	↓

104. Functions of motor system

- Helps to move our body in space and various parts of the body in relation to one another.
- To effect a movement, if agonists are acting, the antagonists should relax and vice versa.
- Lower motor neuron is otherwise known as primary motor neuron.
- One motor neuron can innervate 50–200 fibers. The number may vary in different muscles. The muscles, which carry out tiny movements, receive more number of motor neuron. For example, ocular muscles, small muscles of hand.

- One motor unit consists of:
  - Anterior horn cell
  - Its neuro-axis
  - Muscles that it supplies
- With denervation atrophy 70 to 80% of original muscle mass may be lost within 3 months.
- Anterior horn cell is controlled by:
  a. Pyramidal tract
  b. Rubrospinal tract
  c. Tectospinal tract
  d. Reticulospinal tract
  e. Olivospinal atract
  f. Vestibulospinal tract
- One nerve can receive fibers from various roots and individual muscles may receive impulses from more than one segment of spinal cord
- Denervation of one single muscle fiber undergoes spontaneous contraction, it is called fibrillation.
- Any movement depends on
  a. Contraction of agonist
  b. Relaxation of antagonist
  c. Associated action of synergists
  d. Fixators
- Contraction of groups of muscle fibers are called fasciculations
- EMG done 2–3 weeks after the nerve lesion may show evidence of fibrillation and signs of denervation.
- Paralysis and areflexia occurs before wasting in rapidly developing diseases (e.g. polio) and in injuries – denervation.

105.

S.No.	*Fibrillation*	*Fasciculation*
1.	Individual muscle fiber twitching	Groups of muscles fiber twitching. But no movement at joints.
2.	Cannot be seen	Can be seen

106. In LMN lesions atrophy occurs earlier than weakness (paralysis) or areflexia in degenerative and slowly progressive disorders.

107. WASTING:

a. Neurological causes
   UMN – Late stages disease atrophy
   LMN – Lesion
b. Non-neurological
   - Vascular – ischemia
   - Nutritional
   - Orthopedic – arthritis, etc.
   - Infections – leprosy – TB/HIV
   - Endocrine causes
     i. Diabetes mellitus, IDDM
     ii. Addison's
     iii. Thyrotoxicosis
     iv. Hyperparathyroidism
   - Toxins
   - Drugs – antimetabolites – irradiation
   - Malignancy
   - Miscellaneous
     i. Old age
     ii. Electrolyte imbalance
     iii. Congenital anomaly
     iv. Amyloidosis
     v. Trauma
   - Rheumatoid arthritis

108. Hypertrophy is defined as the increase in size, bulk and volume of the muscle.

109. Atrophy is defined as wasting of muscles or diminution in the size of the muscle. There is changes in size, shape, contour and bulk of the muscle.

110. If there is wasting see, if it is:

a. Generalized (Bilateral)
b. Unilateral
c. In a segmental distribution
d. In the distribution of a peripheral nerve

111. Palpation of the muscle

Normal	– Semi-elastic
LMN lesion	– Soft and pulpy
Myotonia, Hypertrophy	– Firm and hard
Pseudohypertrophy	– Doughy or rubbery
Tenderness	– Myositis

112. Muscle biopsy indicated in

1. Myositis
2. Pseudohypertrophic muscular dystrophy
3. Trichinosis

113. Types of muscle atrophy

– Neurogenic
– Myopathic (Myogenic)
– Disuse

114. Tone may be influenced by

1. Temperature
   a. Cold - ↑ tone
   b. Heat - ↓ tone
2. Emotional state
3. Speed of passive movement
4. Presence of synergistic movements.

115. Why tone is ↓ in spinal shock period of pyramidal lesion. Because the activity of anterior horn cells and the spinal reflexes are temporarily suppressed below the level of lesion; resulting in flaccidity.

116. Types of rigidity

a. Cogwheel } Extrapyramidal lesion
b. Lead pipe }
c. Decorticate rigidity
d. Catatonic rigidity – in schizophrenia
e. Hysterical rigidity
f. Miscellaneous – Tetanus tetany epilepsy
g. Reflex rigidity: For example, rigid abdominal wall in peritonitis
Rigid neck in meningitis

117. Coordination is defined as normal utilization of motor, sensory and synergizing factors in performing a movement.

118. Disturbances in the execution of skilled (works) acts is called apraxia.

119. For normal coordinated movement the following groups of muscles are to be intact.

a. Agonist – Contract to execute the movements
b. Antagonist – Relaxes to facilitate the agonist
c. Synergistic – Reinforce the movement
d. Fixators – Prevent displacement and maintain the appropriate posture of the limb.

120. Ataxia is defined as incoordination due to errors in judgment of rate, range, force and direction of movement.

121. Types of ataxia

a. Static ataxia
b. Motor (kinetic) ataxia

122. Static ataxia

Failure of coordination in resting state. For example, static (Extended) extremity cannot be held quietly and patient will be swaying or oscillating his limb. It is a more severe form. If it occurs, there will be also motor ataxia.

123. Motor ataxia

Appears only on movements. Motor ataxia may be present without static ataxia.

124. Causes of acute ataxia

1. Alcohol
2. Acute labyrinthitis
3. Sickle cell crisis
4. Lead poisoning

125. Rare causes of ataxia

1. Charcot-Marie-Tooth disease
2. Huntington's chorea
3. Refsum's disease
4. Abetalipoproteinemia

126. Risk of myelopathy in cervical spondylitis

1. Disk prolapse may compress the blood supply and thus may cause ischemia.
2. Tethering of cord by ligamentum denticulatum and it may irritate the roots.

127. Cervical spondylitis

Common site: C5–C6 normal cervical cord is 17 mm. Here, it is reduced to 14 mm.

Causes of common lesion at C5–C6

1. Maximal morbidity
2. Maximal lordosis
3. Minimal blood supply – most vulnerable
4. Increased chances of trauma
5. Cervical enlargement of spinal cord
6. Cervical canal is triangular and cord is rounded. Hence, chances of compression are more.

128. ***Neuralgia:*** **Defined as recurrent usually brief, paroxysmal, intense lancinating pain of unknown cause, localized to the distribution of a specific nerve and not associated with objective evidence of nerve dysfunction.**

For example: Trigeminal neuralgia
Glossopharyngeal neuralgia
Postherpetic neuralgia

129. Causes of foot drop

1. Leprosy
2. Facioscapulohumeral muscular dystrophy
3. Myotonic dystrophy
4. Scapuloperoneal muscular dystrophy
5. Duchenne muscular dystrophy

130. High steppage gait causes

1. Common peroneal atrophy
2. Cauda equina lesion L4 to S1 segment
3. Paralysis tibialis anterior extensor digitorum
4. Polio
5. Progressive spinal muscular atrophy
6. Amyotrophic lateral sclerosis
7. Charcot-Marrie-Tooth disease
8. Posterior column lesion; tabes dorsalis

131. Broad based gait

1. Cerebellar degeneration
2. Posterior column lesion tabes dorsalis

132. Waddling gait

1. Pseudohypertrophic muscular dystrophy
2. Dislocation of hips
3. Proximal muscle (hip muscle weakness) disease
4. Osteomalacia
5. Late stages of pregnancy

133. Brainstem reflexes

- Corneal reflex
- Conjunctival reflex
- Gag reflex
- Palatal reflex
- Light reflex
- Swallowing
- Licking the lips

134. Exaggerated lumbar lordosis seen in

1. Duchenne muscular dystrophy
2. Late stages of pregnancy

135. Causes of mononeuritis multiplex

1. Diabetes mellitus
2. Sarcoidosis
3. Rheumatoid arthritis
4. Polyarteritis nodosa
5. Malignancy
6. Amyloidosis
7. Leprosy

136.

1. Hemiballismus → Affects one side of the body – opposite subthalamic nucleus lesion
2. Monoballismus → Affects only one limb
3. Biballismus → Affects both sides
4. Paraballismus → Affects both legs
5. Ballismus → Affects prominently the proximal muscles.

137. Non-pharmacological management of pain (Relief)

1. Nerve block or ganglion block → Temporary / Permanent

Temporary, e.g. local myasthenia
Permanent, e.g. injection of phenol, alcohol of glycerol

2. Nerve avulsion
3. Section of nerve or dorsal root
4. Decompression of nerve
5. Thermocoagulation
6. Acupuncture
7. Transcutaneous electrical nerve stimulation
8. Thalamotomy

138. Head tilt to one side

Seen in

1. IV nerve palsy tiltled to opposite side
2. Tonsilar herniation into foramen magnum
3. Diseases of vernis (anterior central portion of cerebellum)
4. Torticollis
5. Wry neck

139. Tremor

Definition – involuntary contraction of muscle groups producing oscillating movements at one or more joints.

140. Conditions that enhance physiological tremors

Hyperadrenergic states

- Anxiety, fright, restlessness
- Bronchodilator B_2 agonist
- Hypoglycemia
- Hyperthyroidism
- Pheochromocytoma
- Metabolites of L-dopa

141. Drugs causing hyperandrogenic status

- Amphetamine and antidepressants
- Xanthine – tea, coffee
- Alcohol
- Opiate withdrawal

Unknown etiology
- Exercise
- Corticosteroid therapy
- Lithium toxicity

142. Wasting of small muscles of hand

– Ulnar nerve lesion	– Injury
	– Neurofibroma
	– Leprosy
– Pressure on brachial plexus	– Enlarged glands
	– Aneurysm
	– Cervical rib
	– Pancost tumor
– Pressure on nerve roots	– Spondylitis
	– Prolapse of lower disk
– Infection of anterior horn cell	– Poliomyelitis
	– Syphilis
	– Chronic MND
– Pressure on anterior horn cell	– Trauma
	– Syringomyelia
	– Hematomyelia
– Diseases of muscles	– Myopathy
	– Peroneal muscular atrophy
– Other causes	– Rheumatoid arthritis, trauma
– Myokymia is benign cause fasciculations	

143. Causes of flaccid paraplegia

1. Poliomyelitis
2. Cauda equina lesion
3. Polyneuropathy
4. MND – rare
5. Myopathy
6. Carcinomatous radiculopathy

7. Diabetes – polyneuropathy
8. Lumbar canal stenosis – resulting in compression of cauda equina

144. Uses of alcohol (in neurology)

CNS:

1. Ganglion block in trigeminal neuralgia
2. Ganglion block in postherpetic neuralgia
3. Intrathecal infection in paraplegia to avoid flexor spasm.

CVS:

4. For septal ablation in HOCM.

GIT:

5. As an apetiser
6. For management of methanol poisoning.

145. Parasites producing muscle disorders

1. *Trichinella spinalis*
2. Toxoplasmosis
3. Cysticercosis
4. *Echinococcus* (dog tapeworm)
5. Trypanosomiasis (Chages disease)

146. Causes of toe walking

1. Duchenne muscular dystrophy
2. Dermatomyositis childhood
3. Mild alcohol intake
4. Habitual toe walking
5. Children up to 2–3 years of age

147. Gower's signs seen in

1. Duchenne muscular dystrophy
2. Polymyositis
3. Spinal muscular atrophy
4. Congenital myopathy

148. Symptoms of dorsal column sensation

Below the lesion
- Fine tingling paresthesia
- Vibrating sensation as if touching an electronic typewriter
- Too tight skin sensation
- Sensation of extremities encased in plaster
- Wash basin sign

149. Causes of neuropathic joint (Charcol's joint)

1. Tabes dorsalis
2. Syringomyelia
3. Diabetes mellitus
4. Leprosy
5. Charcot-Marie-Tooth disease
6. Spina bifida
7. Trauma
8. Prolonged local steroid therapy
9. Familial dysautonomia

150. Flexor spasm seen in

1. Paraplegia – bipyramidal lesion
2. Friedreich's ataxia

151. Disorder associated with optic atrophy

1. Subacute combined degeneration
2. Peroneal muscular atrophy

152. Causes of optic atrophy

May be due to:

Damage to

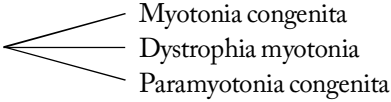
1. Retina
2. Optic disk
3. Optic nerve
4. Optic chiasma
5. Optic tract

For example:
- Optic neuritis
- Compression of nerve by SOL – meningioma aneurysm, etc.
- Toxicity – ethambutol, methanol, ethylene glycol.
- Diseases like
  - i. Multiple sclerosis
  - ii. Arthritis
  - iii. Anterior → Ischemia

MYOTONIA

153. Persistent contraction of muscle even after cessation of stimulus.

154. Abnormality in muscle fiber itself.



155. Experimentally myotonia may be produced by administration of diazole cholesterol and dichlorophenoxyacetic acid

156. Neuromyotonia
a. Myokimia (Benign coarse fasciculation)
b. Cramps
c. Hyperhidrosis
d. Muscle wasting
e. No dimple on muscle on percussion – EMG – after discharge

157. Myotonia congenita
- Thomson type – autosomal – dominant
- Painless generalized stiffness
- ↑ on cold and rest

- ↓ by exercise
- Feeding difficulty
- Psychosis

158. Becker's type
- **Type – Autosomal, recessive**
- **Symptoms are more severe than Thomson type. Develops in late infancy and childhood.**

159. Myotonia paradox: Myotonia ↑ on exertion.

160. Paramyotonia: Myotonia ↑ on exposure to cold.

161. Dystrophia myotonia (myotonia atropia)

162. Electromyogram – after discharge

163. Enzyme – Serum arginine kinase ↑ (Normal 8–14 units at PH8)

164. Chondrodystrophia myotonia

165. Rare autosomal recessive
- Myotonia
- Dwarfism
- Skeletal abnormalities
- Blepharospasm
- Narrow palpebral fissure

166. DD: Periodic paralysis

Treatment:
- Quinine
- Procainamide 250 mg tds
- Phenytoin 100 mg tds

167. After discharge (in EMG study) will be present in true myotonia, but it will be absent in pseudomyotonia.

168. McArdle's disease: Deficiency of myophosphorylase. Glycogen not broken down into glucose 1-phosphate. So, fall in ATP → painful muscle contractions.

169. Swollen optic disk without ICT

< Congenital disk anomaly
< Acquired conditions

- Thyroid disorders
- Secondaries in the lymphoma
- Ischemic optic neuropathy
- Local eye disease like central retinal vein occlusion
- Malignant high BP

170. Chronic use of steroid may produce

1. Deposition of fat selectively in trunk and abdomen associated with straie which is brown or pigmented
2. Acne
3. Hirsutism
4. Buffalo hump
5. Osteoporosis
6. Vertebral collapse and kyphosis

171. CNS causes of vomiting

1. Migraine
2. Labyrinthine disorder
   - Motion sickness
   - Ménière's diseases
3. ↑ ICT
   - Meningitis
   - Encephalitis
   - Tumor

172. Bilateral LMN palsy – 7th nerve

- Bell's phenomenon – present
- Emotional fibers – lost
- Long tract signs – ve

- ↓ jaw reflex
- Corneal and conjunctival reflex – absent
- Guillain-Barrè syndrome

173. Bilateral UMN palsy – 7th nerve

- Bell's phenomenon – absent
- Emotional fibers preserved
- Long tract signs +ve
- Exaggerated jaw reflex
- Corneal, conjunctival reflex–present

174. 7th nerve weakness

		LMN	UMN
1.	Palpebral fissure widened in LMN	Yes	No
2.	Elevation of eyebrow	Absent	Present
3.	Wrinkling of forehead	Absent	Present
4.	Frowning : Lowering of eyebrow	Absent	Present
5.	Tight closure of eyelids	Absent	Present
6.	Bell's phenomena	Positive	Negative

175. Causes of recurrent Bell's palsy

- Melkersson's syndrome

176. Abdominal reflexes will be absent in

1. Previous abdomen surgery
2. Multiparous women
3. Tense ascites
4. Pyramidal lesion
5. During deep sleep
6. During anesthesia
7. Coma
8. In violent emotions such as fear
9. During infancy up to 6/12 – 1 year (By the time pyramidal fibers develop myelination)
10. Herpes zoster

177. Normal abdominal reflex seen in pyramidal lesion in the following conditions

1. Congenital spastic paraplegia (Little's diseases)
2. Rarely transverse lesion of spinal cord
3. Tabes dorsalis
4. Early stages of MND

178. Causes of proptosis

1. Retro-orbital tumor
2. Caroticocavernous fistula
3. Cavernous sinus thrombosis
4. Tumor
   Midbrain (Bilateral) – Infarction
   – Demyelination
   – Intrinsic tumor (Glioma)
   – Basilar aneurysm A-V malformation
5. Superior orbital fissure syndrome
6. Meningioma at superior orbital fissure
7. Periostitis
8. At cavernous sinus level
   – Pituitary adenoma
   – Nasopharyngeal carcinoma
   – Metastasis

179. If associated pupillary abnormality is there – transtentorial herniation

180. Meningism + other cranial nerve involvement – meningitis, TB, syphilis, fungal carcinomatous

181. Pupillary reaction spared-nerve trunk infarction

1. HBP
2. Diabetes mellitus
3. Polyarteritis nodosa
4. SLE

182. Normal plantar response

1. Dorsiflexion of great toe
2. Fanning of other toes
3. Dorsiflexion of ankle – due to contraction of anterior tibial muscles
4. Flexion at knee and hip – due to contraction of hamstring
5. Abduction of thigh – contraction of tensor fascia lata

183. Extensor plantar seen in

1. Pyramidal lesion
2. Till 2 years of age
3. During sleep
4. Coma of any cause
5. Postconvulsive stage of epilepsy
6. Deep anesthesia
7. On drugs like narcotics, alcohol intoxication

184. Clonus

Sudden and passive stretching of muscle results in a series of rhythmic involuntary muscular contractions. This is called clonus.

1. False clonus	Poorly sustained
2. Spurious clonus	Irregular in rate and rhythm
3. Pseudoclonus	Usually psychogenic

185.

True clonus	*False clonus*
1. Severe lesion of pyramidal tract	Psychogenic seen in intensed individual
2. Well sustained	Poorly sustained
3. Regularly rhythmic	Irregular in rate and rhythm (of contraction)
4. Sharp and passive plantar flexion of foot or big toe stops clonus	Not affected by the maneuver
5. Associated pyramidal signs +	No

186. Pseudo-Babinski's sign (Plantar extensor) seen in

1. Planter hyperesthesia
2. From a too strong a stimulus
3. Sometimes in athetosis and chorea due to hyperkinesia
4. There is no contraction of hamstring muscle

187. During recovery stage of LMN VII N. Palsy, if there is aberrant innervation it can cause

1. Crocodile tears
2. Jaw winking when eyes are closed there is movement of angle of mouth

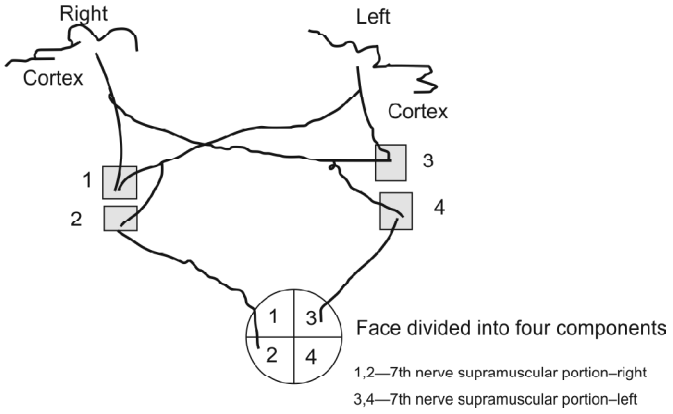
188. Causes of 7th nerve palsy (LMN lesion)

At pons	– Vascular
	– Demyelination
	– Brainstem encephalitis
	– MND
	– Syringobulbia
At CP angle	– Meningioma
	– Acoustic tumors
At facial canal	– Fracture base of skull
	– Spread of infection at middle air cavity
	– Herpes zoster of geniculate ganglion Ramsay Hunt syndrome
	– Leukemic deposits
At periphery	– Parotid tumor
	– Sarcoidosis
	– Trauma

COURSE OF 7TH NERVE

1. Hemifacial spasm
2. Tonic facial spasm
3. Facial myokymia
4. Facial myoclonus

5. Blepharospasm
6. Facial tics



- Non-medical management of trigeminal neuralgia (interventional management)
  a. Injection of alcohol (or) phenol and causing nerve block (gives temporary relief up to 2 years).
  b. Avulsion of supra- or infraorbital nerve.
  c. Injection of alcohol or phenol in the trigeminal (Gasserian) ganglion.
  d. Suction of trigeminal nerve or root.
  e. Microvascular decompression of nerve
  f. Thermocoagulation of the trigeminal ganglion.
  Note: All the procedures may produce facial anesthesia and can cause corneal ulcer, etc.

189. Causes of recurrent stroke

1. Cerebral A-V malformation
2. Arteritis of cerebral arteries
3. Migraine

4. Recurrent small emboli from heart
5. Temporal arteritis

190. Causes of recurrent diplopia (transient diplopia)

1. Migraine
2. Temporal arteritis

191. Epilepsy

Sudden involuntary movements involving all the limbs due to a paroxysmal discharge of uncontrolled impulses from the nerve cells in the CNS.

192. Causes of hypersomnia: (Lesion in the floor of IIIrd ventricle). Due to involvement of structures in the floor of third ventricles

1. For example, tumors/encephalitis
2. Diabetes in insipidus
3. Hypercapnia
4. Primary muscle disease like dystrophia myotonia
5. Myxedema

193. EMG

Myopathy: Waves are polyphasic – short duration – small amplitude

Neuropathy: Waves are polyphasic – long duration – large amplitude

Delirium is an acute disturbance of cerebral function with impaired conscious level, hallucination and autonomic overactivity as a result of toxic, metabolic or infective conditions.

194. Testing nondominant hemisphere

1. Note the patient's ability to find the way around the ward or his home.
2. Can dress himself.

3. Note the patient's ability to copy a geometric pattern. For example, ask him to draw a star/cube, etc.
4. Uncrossed pyramidal tract (anterior corticospinal tract) usually ends at midthoracic level
5. Fifty percent of crossed pyramidal tract ends at cervical level, 20% end in thoracic level, 30% end in lumbosacral cord.

195. Physiological nystagmus

1. Optokinetic nystagmus
2. When the eyes are moved to the extreme in the visual field there may be nystagmus.

196. Normal pressure hydrocephalus – triad of clinical features

1. Dementia
2. Gait disturbances
3. Urinary incontinence

197. Causes of facial pain

1. Postherpetic neuralgia
2. Trigeminal neuralgia
3. Coaten's syndrome
4. Cluster headache
5. Tolosa-Hunt syndrome
6. Carotidynia

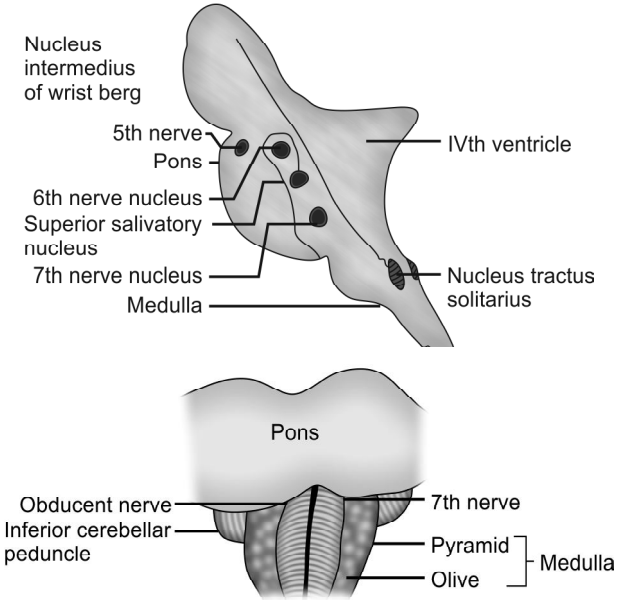
198. Visual hallucinations

1. Migraine
2. Occipital lobe lesion (Unformed objects – zigzag lines of flashes)
3. Temporal lobe epilepsy (formed and complex objects)

199. Olfactory hallucinations

1. Migraine
2. Complex partial seizure

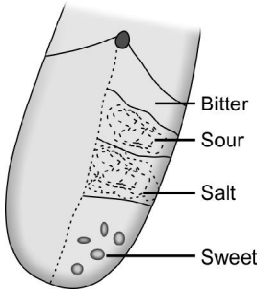
200. CUT section of brainstem



201. Motor function

Internal auditory meatus
↓
Facial canal
↓
Geniculate ganglion
↓
Stylomastoid foramen
↓
Through parotid gland – 1. Temporofacial
2. Cervicofacial
↓
5. Division

202. Taste



Geniculate ganglia
↓
Chorda tympani
↓
Lingual
↓
Tongue

203. Secretomotor

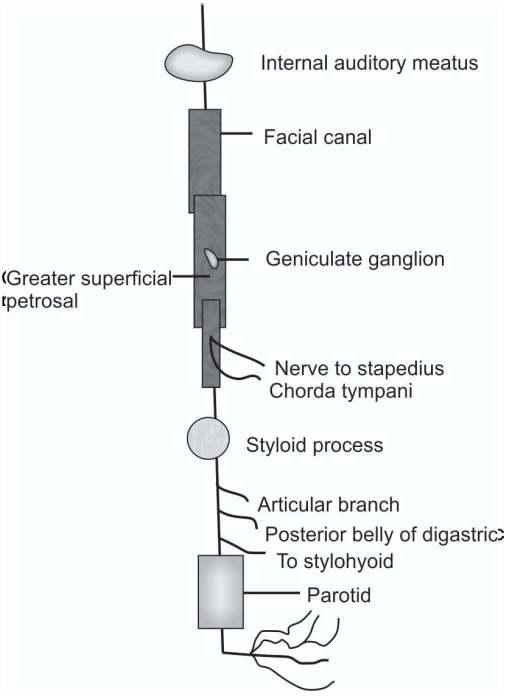
Geniculate ganglion
↓
Chorda tympani
↓
Lingual
↓
Submandibular ganglion
↓
Submandibular gland and sublingual gland

204. Salivary secretion

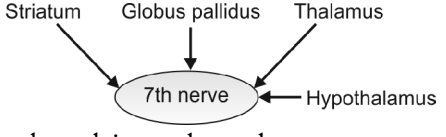
Geniculate ganglion
↓
Greater superficial petrosal nerve
↓

Vidian nerve
↓
Sphenopalatine ganglion
↓
Lacrimal gland

205. 7th nerve



206. Emotional paralysis (Mimic palsy)



Pass not through internal capsular

207. Bell's palsy

1. Viral
2. Ramsay Hunt syndrome
3. Sarcoidosis
4. Melkerson's syndrome
5. Ear infection
6. Fracture
7. Infectious mononucleosis

208. Bilateral LMN

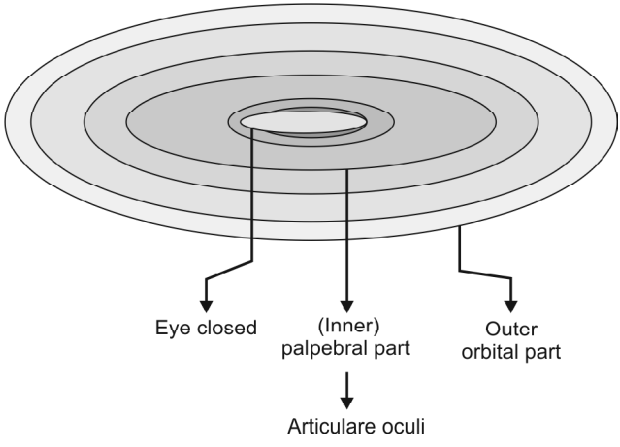
1. Hansen
2. Guillian-Barré
3. Sarcoidosis
4. Myasthenia gravis
5. Congenital (Mobius syndrome)
6. Brainstem encephalopathy

Bilateral
- UMN
- Parkinsonism
- MND

209. Normally upper eyelid should cover about half of width of upper most portion of iris.

210. Margin of lower eyelid crosses the eyeball at the lower edge of the circumference of iris.

211. Orbicularis oculi



Palpebral part—Act involuntarily closing the eyelids gently as in blinking or as in sleep. Orbital portions subject to will. Other muscles supplied by facial nerve

- Platysma
- Posterior/belly of digastric
- Stylohyoid

When the entire articulare oculi contract the eye is closed tightly producing skin folds – especially radiating from the lateral angle of eyelid. These folds become permanent in old age and described as "Crow's feet".

212. Action of lumbrical

In association with interossei, flex the digits of metacarpo-phalangeal joints.

213. Interossei muscle – Palmar/Dorsal

Action: Palmar interossei – Adduction
Dorsal interossei – Abduction

In association with lumbrical they (palmar and dorsal) flex the proximal phalanx

Nerve supply: All interossei (palmar and dorsal) are supplied by ulnar nerve C8 – T1.

214. Muscles of facial expression

1. Muscles of scalp
2. Muscles of eyelids
3. Muscles of nose
4. Muscles of mouth
5. Muscles in the neck

215. 1 (a) Occipitofrontalis and (b) Temporoparietalis
2. Orbicularis oculi
3. Corrugator supercilia – small muscle seen at the medial end of eyebrow.

   Draws the eyebrow medially and downwards and produces vertical wrinkles in the forehead. It is the frowning muscle or supplementary – 7th nerve.

4. **Muscle of nose**
   a. Procerus – draws the medial angle of eyebrows and produces transfers wrinkles over the bridge of the nose.
   b. Nasalis – widens the anterior nasal aperture.
   c. Depressor systi – widens anterior nasal aperture and helps nasalis – all supplied by 7th nerve.

5. **Muscles of mouth – 10 in number**

a. Zygomaticus major	: Draws angles of mouths upwards and laterally as in laughing.
b. Zygomaticus minor	: Elevates upper big and helps in the formation of nasolabial furrow.
c. Orbicularis oris	: Closure of lips Brings the lips together and protrudes them Articulation
d. Mentalis	: Rises and protrudes the lower lip wrinkles the skin of chin
e. Buccinator	: Blowing out air (Buccina means trumpet)
f. Levator labii superioris	: Everts upper lip and helps zygomaticus minor in forming nosocomial furrow.
g. Depressor labii inferioris	: Draws lower lips downwards
h. Depressor anguli oris	: Draws the angle of mouth downwards and laterally as in sadness.
i. Risorius	: Retracts angle of mouth and produces sardonic expression.
j. Levator labii superioris alaeque nasi	: Evarts upper lips and dilates nostale.

216. Muscles of eyelid:

1. Levator palpebrae superioris – III nerve
2. Tarsal muscle – Superior – upper eyelid/Inferior – lower eyelid.
3. Tarsal and Muller's muscles – sympathetic
4. Articulus virile
5. Corrugators supercilii – 7th nerve

217. Muscles of auricle: Extrinsic and intrinsic

Extrinsic (Connects the ears to **the skull)**	– Auricularis anterior – Auricularis posterior – Auricularis superior
Intrinsic (They extend from one part of auricle to another)	– Helices major – Helices minor – Tragicus – Transverse auricle – Obliques auricle

218.

S.No.	*Myotonia*	*Pseudomyotonia*
1.	After discharge in EMG+	After discharge
2.	EMG has waxing and wavering configuration (Building up as crescendo and then fading gradually)	Begin and end Bizarre Bizarre high Frequency discharges
3.	Gines and dive bomber sound in audio buster	Not so
4.	Primary disease is in muscle	Primary disease is elsewhere, seen in a. Hypothyroidism b. Diabetes mellitus c. Pernicious anemia, etc.
5.	Contraction continues even after cessation of stimuli	Contraction as well as relaxation are slow. But more in relaxation.

3 Chapter Abdomen

SYMPTOMS OF GASTROINTESTINAL (GI) DISORDERS

1. **Causes of aanorexia (loss of desire to eat)**
    1. CCF
    2. Jaundice – Hepatitis
    3. Ca stomach
    4. Renal failure
    5. Pulmonary failure
    6. Addison's disease
    7. Panhypopituitarism
2. **Causes of dysgeusia (Bad taste in mouth)**
    1. Poor oral hygiene
    2. Ch. sinusitis
    3. Ch. tonsillar infection
    4. Inoperable advanced Ca stomach
    5. Ca esophagus
    6. Cerebrovascular accidents in elderly
    7. Psychogenic
3. **Causes of dyspepsia (epigastric discomfort) (short of pain)**
    1. Peptic ulcer
    2. Ca stomach

3. Gastritis
4. Gallbladder disease

4. Causes of heartburn (Pyrosis)

1. Esophageal spasm
2. Esophagitis
3. Hiatus hernia
4. Peptic ulcer
5. Gastritis
6. Gallbladder disease
7. Pregnancy
8. Alcohol, aspirin

5. Causes of gain in weight

1. Overeating
2. Less physical activity
3. Hypothyroidism
4. Cushing's syndrome
5. Hyperinsulinism (insulinoma)
6. Hypogonadism in male
7. Polycystic ovary
8. Familial

6. Causes of loss of weight

1. Diabetes mellitus type I
2. Thyrotoxicosis
3. Neoplasm
4. Malabsorption states
5. Tuberculosis
6. Psychological disorders
7. Chronic infections
8. Adrenal insufficiency

7. Difference between vomiting and regurgitation

S.No.	*Vomiting*	*Regurgitation*
1.	Disease of stomach (Return of gastric contents)	Disease of esophagus
2.	Accompanied by nausea, retching or straining	Not so
3.	↑Heart rate	Normal heart rate
4.	Vigorous contraction of diaphram and chest muscles (+)	Not so

8. Causes of early morning vomiting

1. Pregnancy
2. Alcoholism
3. Anxiety state
4. Uremia

9.

S.No	*Visceral pain*	*Peritoneal pain*
1.	Deep – felt	Superficially felt
2.	Muscle guarding absent	Present
3.	Deep structures like gut are affected	Parietal peritoneum is affected
4.	Difficult to localize the pain	Comparatively easy to localize the pain

10. Medical causes of acute abdomen

1. Tabes dorsalis
2. Acute intermittent porphyria
3. Hypercalcemia
4. Thrombosis due to polycythemia, e.g. Fallots
5. Sickle cell anemia
6. Type I hyperlipidemia

7. Lead poisoning and arsenic poisoning
8. Pancreatitis and inflammation of other organs
9. Diabetic ketoacidosis
10. Infective endocarditis due to embolism
11. Rupture of aneurysm of abdominal aorta (Rupture of dissecting aneurysm of abdomen aorta)
12. Rarely rheumatic fever
13. Hemochromatosis
14. Leptospirosis
15. Malaria
16. Pneumonia (more so in lower lobe pneumonia)
17. Black widow spider bite
18. Sickle cell disease

11. Acute abdomen

1. Diabetes mellitus
2. Addisonian crisis
3. Hypercalcemia
4. Heat cramps

} Metabolic

5. Acute hemolysis (sickling)
6. Porphyria
7. Allergic purpura

} Hematological

8. Heavy metals (PG)
9. Carbon tetrachloride
10. Bacterial toxin
11. Poisonous fungi

} Poisoning

12. Causes of acute diarrhea

1. Age
2. Cholera
3. Food poisoning
4. Infections due to *E. coli, Sheigella, Staphylococcus, Salmonella,* etc.
5. Viral infections

6. Due to heavy metal poisoning – arsenic, mercury, copper, cadmium
7. Due to parasites
8. Use of purgatives

13. Gingival hyperplasia

1. Scurvy
2. Leukemia – (acute monoblastic)
3. Drugs – phenytoin
4. Heavy metals
5. Pregnancy, oral contraceptive cyclospirm
6. Gum bleeding → Ehlers-Danlos syndrome
7. Vitamin C deficiency
8. Lead poisoning

14. Causes of chronic diarrhea

1. Thyrotoxicosis
2. Disaccharidase deficiency – lactase deficiency
3. Streatorrhea
4. Irritable colon
5. Carcinoid tumor
6. Chronic pancreatitis
7. Celiac disease
8. Ulcerative colitis
9. Tuberculous enteritis
10. Amyloidosis
11. Whipple's disease
12. Malabsorption syndrome

15. Causes of black (Tarry) stools

1. GIT bleeding
2. Iron tablets
3. Bismuth
4. Charcoal

16. GIT disorders which run in families

1. Celiac disease
2. Ulcerative colitis
3. Crohn's disease
4. Familial polyposis of colon
5. Wilson's disease
6. Hemochromatosis
7. Cirrhosis liver
8. Moniliasis
9. Leukoplakia
10. Diphtheria
11. Severe anemia (Pale)
12. *Candida albicans*

17. Oral pigmentation seen in

1. Malabsorption syndrome
2. Thyrotoxicosis
3. Hemochromatosis
4. Heavy metals: Hg, bismuth

18. Causes of black tongue (Hairy tongue)

1. Fungal infection
2. Worm infestation (Ancy)
3. Addison's disease
4. Heavy smoking
5. Prolonged antibiotic therapy
6. Malignant melanoma
7. Normal: congenital
8. Drugs : Oral contraceptives, antimalarials, tranquilizers
9. Peutz-Jeghers syndrome

19. Causes of dry tongue

1. Severe dehydration
2. Heavy smoking
3. Mouth breathers

4. Sjögren's syndrome
5. Late stages of uremia
6. Intestinal obstruction
7. Drugs: Atropine, AH, phenothiazines, tricyclic antidepressants

20. Causes of macroglossia

1. Myxedema
2. Cretinism
3. Tumors of the tongue
   a. Primary hemangiomas
   b. Secondary hemangiomas
   c. Lipoma
4. Glycogen storage disease
5. Amyloidosis
6. Acromegaly
7. Down's syndrome
8. Duchenne muscular dystrophy rare
9. Acute renal failure
10. Angioneurotic eedema

21. Causes of microglossia

1. Chronic malnutrition – under nourishment
2. Unilateral or bilateral 12th nerve (LMN) palsy

22. Geographic tongue

Seen in some normal individuals. Cause not known. The pattern changes within few days.

23. Strawberry tongue

Late stages of scarlet fever. Tongue is reddened. Otherwise known as raspberry tongue.

24. Magenta tongue

Seen in riboflavin deficiency. The papillae are reddened and swollen. Also known as Cobblestone tongue.

25. Tremor of tongue seen in

1. Thyrotoxicosis
2. Nervousness
3. Parkinsonism
4. Delirium tremens
5. Dementia paralytica
6. Alcoholism
7. Rheumatic chorea
8. Tic
9. Athetosis
10. Anxiety state
11. Dystonia
12. Drugs: phenothiazine
13. Trombone tongue

26. Ironed out (smooth) tongue (atrophic glossitis)

1. Pernicious anemia
2. Sprue
3. Pellagra
4. Iron deficiency anemia
5. GIT disorders

27. Tongue

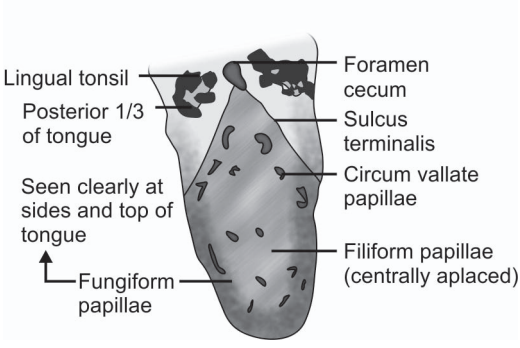
Function

Major:
1. Speech lingual
2. Taste

Minor:
1. Helps in mastication
2. Helps in deglutition

1. It lies partly in mouth and partly in pharynx.
2. It is attached to:
   a. Hyoid bone
   b. Styloid process
   c. Mandible
   d. Wall of pharynx
   e. Soft palate

3. Normally the tongue is pink in color.
4. It has a tip, root, dorsum of tongue and inferior surface of tongue.
5. The root is attached to hyoid bone and mandible.
6. The dorsum of tongue is covered from before backwards and from side to side.
7. The inferior surface of tongue has frenulum linguae in midline. On either side of this the lingual vessels run parallel. The submandibular salivary glands open on either side of frenulum linguae.
8. The tongue is divided into two parts:
   a. Anterior 2/3 → oral part
   b. Posterior 1/3 → pharyngeal part
   The demarcating line in sulcus terminalis



Nerve supply: Different for anterior 2/3 and posterior 1/3 of tongue.

Anterior 2/3 of tongue: General sensation by lingual nerve is branch of mandibular (Inferior division of trigeminal nerve)

Taste sensation is through chorda tympani nerve.

Posterior 1/3 of tongue: Both general sensation and taste sensation is through glossopharyngeal nerve.

28.

Anterior 2/3rd of tongue	*Posterior 1/3rd of tongue*
1. Oral part	1. Pharyngeal part
2. Papillae are present	2. Absent
3. General sensation is through 5th nerve	3. Through 9th nerve
4. Taste sensation is through chordae tympani nerve	4. Through 9th nerve
5. Developed from mandible arch	5. Developed from hypo-bronchial eminence

29. Scrotal tongue
There are transverse furrows usually inherited.

30. Syphilitic tongue
The fissures (furrows) are longitudinal. Seen in syphilis.

31. Hard liver
1. Malignancy
2. Cirrhosis

32. Soft liver
1. Congestive liver - CCF

33. Small liver
1. Late stages of cirrhosis
2. Acute liver failure

34. Tender liver
1. Infection – Viral
2. Infestation – Amebic
3. CVS – CCF

35. Liver dullness is reduced in
1. Right sided pneumothorax
2. Severe emphysema
3. Large collection of gas under right hemidiaphragm

36. Liver pulsation

Systolic → Tricuspid incompetence
Diastolic → Tricuspid stenosis

37. Palpable liver without hepatomegaly

1. In young children
2. Riedel's lobe of liver (common in female)
3. Visceroptosis
4. Right-sided pleural effusion
5. Right-sided subdiaphragmatic diseases

38. Causes of nodules in liver

1. Secondaries
2. Primary
3. Hepar lobatum (tertiary syphilis)
4. Macronodular cirrhosis
5. Polycystic disease
6. Hydatid disease

39. Headings under which hepatomegaly is to be defined

1. Edge – Sharp (OR) blunt
2. Surface — Smooth / Nodular / Regular / Irregular
3. Consistency — Soft / Firm
4. Tenderness
5. Pulsation
6. Friction sound
7. Bruit

40. Causes of hepatomegaly

Tender – CCF
Amoebic hepatitis
Viral hepatitis
Pyogenic abscess liver

Nontender

1. Cirrhosis/Portal hypertension
2. Malaria
3. Hodgkin's disease
4. Leukemia
5. Amyloidosis
6. Sarcoidosis
7. Fatty infiltration
8. Malignancy – Primary/Secondary
9. Hydatid

41. Tender hepatomegaly

1. CCF
2. Viral hepatitis
3. Amoebic abscess
4. Pyemic abscess
5. Hepatoma
6. Actinomicosis of liver
7. Weil's disorder
8. Hepatic vein thrombosis

42. Causes of enlarged gallbladder

1. Obstruction of bile duct
2. Obstruction of cystic duct
3. Cancer of gallbladder

43. Causes of hepatic rub

1. Abscess of liver
2. Neoplasm of liver
3. After liver biopsy

44. Palpable spleen without splenomegaly

1. Accessory spleen
2. Visceroptosis

3. Left-sided pleural effusion
4. Wandering spleen

45. Tender splenomegaly

1. Typhoid
2. Bacterial endocarditis
3. Miliary TB – some cases

46. Causes of massive splenomegaly

1. Chronic malaria
2. Chronic kala-azar
3. Myeloid leukemia
4. Storage disorders
5. Hypersplenism
6. Tumor or cyst

47. Difference between splenomegaly and renal swelling

Splenomegaly	*Renal swelling*
1. Felt coming from under the costal margin	Not so
2. Splenic notch felt	Not so
3. Enlargement is to the right iliac fossa	Enlarges downwards
4. Moves freely with respiration	Not so freely moves
5. Cannot insinuate the fingers below the costal margin	Can do so
6. No band of resonance on percussion	Band of resonance + on percussion (Due to gut over the kidney)
7. Felt superficial in the abdomen	Felt deep in the abdomen bimanually palpable

48. Causes of splenomegaly

1. Portal hypertension
2. Typhoid

3. Infective endocarditis
4. Polycythemia rubra vera
5. Infectious mononucleosis
6. Sarcoidosis
7. Hemolytic states
8. Viral hepatitis

49. Splenomegaly

Massive enlargement:

1. Chronic malaria
2. Chronic myeloid leukemia
3. Myelofibrosis
4. Kala-azar
5. Chronic congestive splenomegaly due to portal hypertension
6. Polycythemia rubra vera
7. Thalassemia major (children)
8. Gaucher's disease and other lipid storage disorders
9. Tuberculosis
10. Tropical splenomegaly syndrome

50. Moderate enlargement

1. Chronic lymphatic leukemia
2. Malignant lymphoma (Hodgkin's, lymphosarcoma reticular cell sarcoma, follicular lymphoma)
3. Acute leukemia
4. Amyloidosis
5. Anemias – megalo- and normoblastic
6. Hemolytic disorders
7. Idiopathic thrombocytopenic purpura
8. Thalassemia and hemoglobinopathies
9. Biliary cirrhosis
10. Chronic active hepatitis
11. Hemochromatosis
12. Sarcoidosis

13. Acute and subacute bacterial endocarditis
14. Essential hypertriglyceridemia
15. Multiple myeloma
16. Splenic abscess

51. Mild enlargement and also acute

Infections

1. Malaria
2. Infective mononucleosis
3. Acute viral hepatitis
4. Typhoid and paratyphoid
5. Septicemia
6. General miliary tuberculosis
7. Trypanosomiasis
8. Schistosomiasis
9. Relapsing fever
10. Brucellosis

Connective tissue disorders

1. Systemic lupus erythematosus
2. Polyarteritis nodosa
3. Felty and Still's disease

Injury

1. Hematoma
2. Rupture

52. Causes of splenic rub

1. Perisplenitis (inflamed splenic capsule)
2. Splenic infarction
3. After splenic venography

53. Causes of epigastric pulsation

1. Aortic pulsation in normal thin individuals
2. Transmitted pulsation from a tumor (Ca stomach) overlying the aorta

3. Distention of right ventricle
4. Venous pulsation of liver
5. Expansible pulsation of an aneurysm

54. Soft spleen → Typhoid
Firm spleen → Malaria
Splenic pulsation can be rarely felt in combined mitral and tricuspid diseases.

55. For better information auscultation of the abdomen in
a. Deep expiration
b. With the bell of stethoscope

56. Depth of jaundice in obstructive cause – Moderate-to-severe

57. Long-standing case of jaundice will produce xanthelasma

58. In infective hepatitis, 20% of cases will have mild splenomegaly.

59. In the presence of splenomegaly do not percuss on left side for ascites

60. Free fluid without shifting dullness
– too little fluid
– too much fluid (Tease ascites)
– loculated fluid

61. To demonstrate shifting dull and fluid thrill (in the abdomen) the minimal fluid in the peritoneal cavity must be 500 ml. Fluid less than this quantity cannot be demonstrated by the above methods.

62. By Puddle sign as little as 120 ml may be demonstrated in the peritoneal cavity.

63. Arterial bruit in abdomen
1. Renal artery stenosis
2. Obstruction of superior mesenteric artery

3. Obstruction of celiac axis
4. Obstruction of splenic artery
5. Abdominal aortic aneurysm (small) (Not if the aneurysm is large). Compression of any major artery will produce bruit.

64. Venous hum in abdomen

1. Portal hypertension – due to opening up of umbilical vein which drains into the left branch of portal vein. Better heard when the patient stands erect; midway between umbilical and xiphisternum.
2. AV fistula in the abdomen.

65. Enlarged gallbladder without jaundice

1. Acute cholecystitis
2. Pericholecystic abscess
3. Calculus obstruction of cystic duct
4. Empyema of gallbladder

66. Enlarged gallbladder with jaundice

1. Obstruction of distal bile duct may be due to:
   - Ca of head of pancreas
   - Ca sphincter of Oddi

Aneurysm of abdominal vessel (aorta)	*Mass adjoining a normal vessel*
1. Expansible pualsation +	1. Transmitted pulsation +
2. A murmur may be audible	2. No murmur
3. No other organ is felt, other than the vessel	3. The organ adjoining the vessel is enlarged and felt

67. Causes of striae in abdomen

1. Pregnancy
2. Multiparous women
3. Cushing's syndrome

4. Abdominal tumor
5. Obesity

68. Difference between ascites and ovarian cyst

Ascites	*Ovarian cyst*
1. Distended abdomen is of uniform	1. Abdomen prominent in the lower half
2. Umbilicus is flat or bulges out	2. Umbilicus is drawn upwards
3. Slit in the umbilicus is transverse	3. It is vertical
4. In supine position the abdomen is resonant above (and dull in flanks)	4. The abdomen is resonant over the cephalic end (because the intestines are pushed to cephalic end)

69. Causes of ↑ bowel sounds

1. Diarrhea
2. Early stages of intestinal obstruction
3. Early stages of pyloric obstruction

70. Absent or ↓ bowel sounds

1. Peritonitis
2. Paralytic ileus
3. Anemia
4. Abnormal intestinal obstruction
5. Spinal cord injuries

71. Mass in the epigastrium

1. Stomach growth
2. Pancreatic cyst
3. Pseudopancreatic cyst
4. Left lobe of liver
5. Transverse colon
6. Omental mass

72. Mass in right hypochondrium due to

1. Liver
2. Gallbladder
3. Occasionally right kidney
4. Colon

73. Mass in left hypochondrium

1. Spleen
2. Left kidney – rarely
3. Pancreas – tail
4. Colon

74. Mass in right iliac fossa

1. Cecum
2. TB granuloma
3. Pericecal abscess
4. Regional ileitis
5. Neoplasm
6. Colonic involvement
7. Appendicular mass

75. Mass in iliac fossa: due to

1. Sigmoid colon
2. Neoplasm

76. Mass in suprapubic region

1. Bladder
2. Ovarian cyst
3. Gravid uterus
4. Uterine tumors

77. Causes of polyphagia (bulimia) (↑ appetite)

1. Thyrotoxicosis
2. Diabetes mellitus
3. Psychogenic
4. Migraine

78. Causes of constipation

1. Intestinal obstruction
2. Growth in GI tract
3. Atonic colon
4. Irritable colon
5. Hyperparathyroidism
6. Megacolon
7. Myxedema
8. Psychogenic
9. Stroke
10. Drugs like opium

79. Causes of bleeding gum

1. Scurvy
2. Thrombocytopenia
3. Bleeding tendencies – Hemophilia purpura
4. Hereditary hemorrhagic telangiectasia
5. Viper bite poisoning
6. Leukemia
7. Agranulocytosis
8. Renal failure

80. Causes of white spots or alteration in crown structure of teeth

1. Vitamin D refractory rickets
2. Hypoparathyroidism
3. Gastroenteritis
4. Celiac disease

81. Predisposing factors for oral cancer

1. Tobacco-chewing
2. Heavy smoking
3. Excessive consumption of alcohol
4. Syphilitic glossitis
5. Atrophic mucosa of Plummer-Vinson syndrome
6. Leukoplakia

82. Precautions (preparation) for liver biopsy

1. Prothrombin time estimation
2. Bleeding time, clotting time estimation
3. Blood group examination (to give blood in case of bleeding)
4. Platelet count
5. X-ray chest and abdomen (to study liver size)
6. Injection vitamin K to be given prior three days

83. Contraindication for liver biopsy

1. Ascites
2. Hydatid disease of liver
3. Bleedings tendencies
4. Small liver
5. Hemangioma (liver)
6. Subdiaphargmatic abscess
7. Right sided empyema
8. Severe hepatocellular failure

84. Complications of liver biopsy

1. Pleurisy
2. Perihepatitis
3. Small pneumothorax
4. Intrathoracic hemorrhage
5. Intraperitoneal hemorrhage
6. Puncture of viscera like kidney
7. AV fistula

85. Indications for liver biopsy

1. Jaundice
2. Cirrhosis
3. Hemochromatosis
4. Wilson's disease
5. Alcoholic hepatitis
6. Hepatic tumors
7. Infections of liver like TB, syphilis, leptospirosis, etc.

8. Storage disease
9. Hepatomegaly of unknown cause

86. Difference between hepatoma primary and secondary deposits

Hepatoma primary	*Secondary deposits*
1. Umbilication of tumor is absent	1. Tumor is umbilicated
2. Arterial bruit + (because of arterial vascularity tortuosity and variation in caliber of vessels)	2. Absent
3. Friction rub +	3. May be +
4. Jaundice uncommon	4. Common
5. Alpha-fetoprotein +	5. Absent
6. Signs of portal hypertension less	6. More

87. Causes of hepatocellular failure

1. Viral hepatitis
2. Cirrhosis
3. Fatty liver of pregnancy
4. Drug induced
   a. Halothane
   b. Acetaminophen
   c. Paracetamol
5. Hepatic vein occlusion
6. Ligation of hepatic artery near the liver

88. Precipitating factors for hepatic coma

1. Excessive use of diuretics – electrolyte imbalance
2. Paracentesis – fluid loss and electrolyte imbalance
3. Vomiting and diarrhea – fluid loss and electrolyte imbalance
4. Hypotension of any cause
5. Infections
6. Narcotics
7. Cerebral hypoxia/anoxia/hypoperfusion
8. GI bleed

9. Surgical procedures including anesthesia
10. Severe constipation
11. High protein diet
12. Pre-existing CNS disorders

89. CNS manifestations of hepatic failure

1. Encephalopathy
2. Parkinsonism
3. Cerebellar signs
4. Spinal cord involvement – paraplegia
5. Demyelination of spinal cord
6. Focal cerebral symptoms
   a. Constructional apraxia
   b. Epileptic fits
   c. Dementia
   d. Flapping tremor
7. Disturbed consciousness
8. Personality changes (frontal lobe involvement)
9. Intellectual deterioration
10. Speech disturbances – slow slurred
11. Intertion of sleep rhythm (I change)

90. Causes of death in hepatic coma

1. GI bleed and bleeding from all possibilities including cerebral
2. Respiratory failure
3. Circulatory failure
4. Renal failure
5. Cerebral edema
6. Infection – mainly gram-negative
7. Hypoglycemia
8. Pancreatitis

91. Prognosis in acute hepatic failure

1. Age : Prognosis is better in children than in old age
2. Sex : Prognosis is better in man than in women

3. Depth of coma : If coma is only up to grade '2' prognosis is better
4. Duration of coma : If coma is prolonged prognosis is poor

92. Causes of dysphagia

- Local
- Systemic

I. *Local Cause*

- Glossitis
- Tonsillitis
- Stomatitis
- Pharyngitis

Painful
- Lingual ulcer
- Carcinoma
- Ludwig's angina
- Mumps
- Acid poisoning

Painless – Stricture esophagus
– Xerostomia in sjögren's syndrome

II. *Systemic Causes*

Painful
- Rabies
- Tetanus
- Plummer-Vinson syndrome
- Ca esophagus
- Hiatal hernia
- Esophagitis
- Diverticulum of esophagus
- Foreign body

Painless
- Globus hystericus
- Bulbar paralysis
- Myasthenia gravis
- Parkinsonism
- Scleroderma
- Amyloidosis
- Aortic aneurysm
- Mediastinal tumor

93. Causes of lock jaw (Trismus)

- Local causes
- Systemic causes

I. *Local causes*
- Arthritis of temporomandibular joint
- Impacted 3rd molar tooth
- Trigeminal neuralgia
- Dermatomyositis of face
- Peritonsillar abscess (Quinsy)
- Submucosal fibrosis due to hansen, etc.

II. *Systemic causes*
- Tetanus
- Tetany
- Rabies
- Strichnin poisoning
- Encephalitis
- Hysterical
- Epilepsy

94. Constipation
- Less than three stools per week
- Passage of excessively dry stool
- Small quantity less than 50 gm per day
- Usually associated with difficulty in passing stools

95. Medical causes of constipation
1. Hypothyroidism
2. Hypokalemia
3. Pregnancy
4. Autonomic neuropathy
5. Multiple sclerosis
6. Parkinsonism
7. Hirschsprung's disease

8. Myotonic dystrophy
9. Irritable bowel syndrome
10. Diverticulosis
11. Diabetes mellitus
12. Drugs – opiates – anticholinergics – antidepressants
13. Hyperparathyroidism
14. Hypercalcemia
15. Lead poisoning
16. Porphyria

i. Normal stool weight is less than 200 g/day
ii. 60-80% is water (about 100 ml)

96.

Small bowel diarrhea	*Large bowel diarrhea*
1. Periumbilical, intermittent, pain	1. Pain in lower abdomen pubis or sacral region
2. Large stool	2. Small stool
3. Undigested food particles may be seen	3. Not so
4. Tender mass and sense of urgency may not be there	4. May be present
5. Uniformly watery	5. Watery with small pieces of faced matter

97. Weight loss inspite of good appetite

1. IDDM
2. Thyrotoxicosis
3. Steatorrhea
4. Pheochromocytoma

98. Vascular

1. Infarction
2. Splenic vein thrombus

3. Embolism
4. Passive hyperemia from torsion of pedicle

99. Cysts and benign tumors

1. Hydatid
2. Dermoid
3. Hemangioma
4. Lymphangioma
5. Endothelioma
6. Polycystic disease

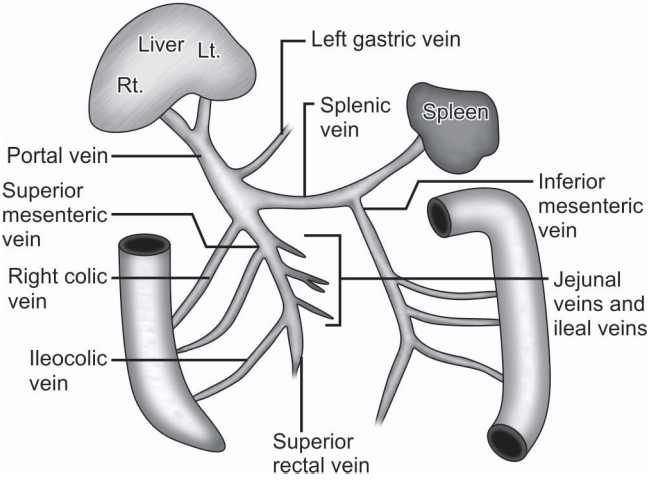
100. Porto systemic communication:

Portal vein	*Systemic vein*
1. Left gastric vein	1. Esophageal tributaries of accessory hemiazygos vein
2. Superior rectal vein	2. Middle and inferior rectal vein (Bleeding PR)
3. Paraumbilical vein in the falciform ligament	3. Subcutaneous vein, epigastric vein (caput medusae)
4. Twigs from colic vein and splenic vein	4. Left renal vein
5. Veins of Bare area of liver	5. Right internal thoracic vein and veins of diaphragm

101. Sites of porto systemic communication

1. Lower end of esophagus
2. Around umbilicus
3. Lower portion of rectum
4. Bare area of liver
5. Retroperitoneal area just in front of kidneys

102.



103. Testes

Size	: 4 – 5 cm long ; 2 – 5 cm breath ; 3 cm AP diameter
Weight	: 10 – 14 gm.
Anarchism	: Both testes are retained in the abdomen and do not descend
Monarchism	: Absence of one testes in scrotum. This is undescended on one side.
Blood supply	: Testicular arteries arise directly from aorta just below renal arteries
Venous drainage	: Testicular vein
Right side	: Emerge from the back of testis receives tributaries from epididymis and pampiniform plexus of veins.

Left side : Testicular veins
↓
Emerges from the back of testes
↓
Receives tributaries from epididymis
↓
Pampiniform plexus
↓
Testicular vein
↓
Lt. renal vein at Rt. angle
(Compressed by the impacted descending colon)
Varicose vein is common in right side.

N. supply: T10 and T11

Lymphatic drainage
- Lateral and Pre-aortic lymph nodes
- Int. and Ext. iliac lymph nodes
- Inguinal lymph nodes

104. Causes of non-cirrhotic portal hypertension

Prehepatic:	1. Splenic vein thrombus
	2. Splenomegaly
	3. Puerperal infection
Hepatic pre-sinusoidal:	Schistosomiasis
	Myeloproliferative disorders
	Lymphoproliferation
	Sarcoidosis
Vinyl chloride:	Drugs
	Congenital hepatic fibrosis
	Idiopathic
Posthepatic:	Hepatic vein occlusion
	Budd Chiari syndrome

105.

S.No.		*Amoebic dysentery*	*Bacillary dysentery*
1.	Frequency	6 – 8 stools/day	>10
2.	Quantity	Copious amount	Small
3.	Smell	Offensive smell	Odorless
4.	Color	Dark red	Bright red
5.	Fecal matter	Faecal matter +	Very little/almost
6.	pH	Acidic	Alkaline
7.	Adhesive	Does not adhere to container	Adhesive to container
8.	RBC	RBCs in slumps	Discrete
9.	Pus cell	Pus cells scanty	Plenty
10.	Shape	Macro shapes few	Plenty
11.	Parasites	Parasites +	Absent
12.	Charcot-Leyden crystals	Charcot Leyden-crystals present	Absent

106. Difference between Weil's/Viral hepatitis

S.No.	*Weil's*	*Viral hepatitis*	
1.	Onset	Sudden	Gradual
2.	Headache	Constant	Occasional
3.	Muscle pain	Severe	Mild
4.	Conjunctivitis	Present	Absent
5.	Prostration	Great	Mild
6.	Disorientation	Common	Rare
7.	Hemorrhagic fever	Common	Rare
8.	Bronchitis	Common	Rare
9.	Albuminuria	Present	Absent
10.	Leukocytes count	Polymorphs	Leucopenia

107. Relative bradycardia

1. Appendicitis – Referred pain in testes
2. Ureeric colic (Renal)

3. Appendicitis
4. Typhoid fever

108. Causes of renal colic

1. Renal stone
2. Blood clots passing through ureter
3. Inspissated pus through ureter
4. Sudden kink in ureter

109. Causes of tenesmus

1. Bacillary dysentery
2. Acute proctitis
3. Impacted facies
4. Ca rectum
5. Anorexia

110. Peyer's patches

- Lymph follicles
- Mainly seen in ileum. In ileum they are larger and also numerous. In jejunum also they are seen. But they are small patches and few in number and seen in lower part of jejunum. They are occasionally seen in duodenum.
- They are numerous around puberty and diminish in number and size in old age. But they may persist in old age.
- Seen in antimesenteric border
- Oval in shape
- In typhoid, it ulcerates and heals without scar or constriction of the gut. Because the ulcer are in long axis.

111. Three structures in the portal hepatis (Portal triad)

- Portal vein
- Bile duct
- Hepatic artery

112. Portal system vein

- Abdominal and pelvic portion of GIT except distal part of anal canal.

- Also stains spleen, pancreas and gallbladder
- Portal vein and its tributaries have no valves
- The portal blood contains products of digestion of carbohydrates, proteins, fats from the intestines and products of red cell destruction from spleen.
- Portal system starts in the capillaries and ends in the venous sinusoids in the liver.
- Hepatic vein drains blood received from both hepatic artery and portal vein.

113. Each kidney has one million nephron

- There are about 300 million alveoli (on both sides) having more than 65 sq. miles of surface area.
- The bronchus ends in alveoli after 23 generations of branches.

114. Zenker's degeneration – Seen in enteric fever. The common muscle affected is rectus abdominis

Zenker's diverticulum's – Diverticulum's of esophagus

115. Conditions associated with inappropriate antidiuretic hormone secretion

I. *Malignancies*
   a. Oat cell carcinoma of boundary
   b. Carcinoma pancreas
   c. Carcinoma duodenum
   d. Carcinoma colon
   e. Carcinoma nasopharynx
   f. Hodgkin's disease

II. *CNS diseases*
   a. Meningitis
   b. Cerebral abscess
   c. Head injury
   d. Cerebral metastasis
   e. Hemorrhage and tumors of brain

III. *Pulmonary disease*
    a. Tuberculosis
    b. Pneumonia
    c. Lung abscess
IV. *Endocrine disorders*
    a. Myxedema
    b. Addison's disease
    c. Hypopituitarism

4 Chapter Cardiology

1. General considerations in cardiology

1. Congenital cyanotic heart disease nearly always causes right ventricular hypertrophy. The outstanding exception is tricuspid atresia.
2. In tricuspid atresia there is *only* the left ventricular hypertrophy. So a combination of congenital cyanotic heart disease with marked left ventricular hypertrophy on clinical, radiological and ECG evidence is indicative of tricuspid atresia.
3. In acyanotic group the left ventricular hypertrophy is associated with coarctation of aorta, VSD and PDA
4. A single unsplit second sound is heard in:
    i. Fallot's tetralogy
    ii. Severe pulmonary stenosis
    iii. Persistent truncus arteriosus
5. Widely split second sound occurs in
    i. ASD
    ii. Mild pulmonary stenosis
6. Plethoric lung field are seen in left to right shunt as in:
    i. ASD
    ii. VSD
    iii. PDA

7. Congenital cyanotic heart diseases associated with plethoric lung fields are:
   a. Transposition of great vessels
   b. Persistent truncus arteriosus
8. The lung fields are oligemic in
   a. Pulmonary stenosis
   b. Fallot's tetralogy
   c. Ebstein's anomaly
9. Conspicuous pulsation of pulmonary arteries (Hilar dance) is a feature of ASD also seen in VSD and PDA.
10. Vigorous pulsation of heart and aorta is found when coarctation of aorta is associated with aortic incompetence due to bicuspid aortic valves.
11. Diminished pulsation of the heart – a quiet heart – is seen in
    a. Ebstein's anomaly
    b. Cardiac tamponade
    c. Massive pericardial effusion
12. All cases of congenital cyanotic heart diseases tend to develop polycythemia and are therefore prone to thrombotic complications.
13. Subacute bacterial endocarditis may complicate any congenital heart disease. But, it is rare in septum secundum type of ASD.

    Ebstein's anomaly is the only cyanotic congenital heart disease, which has right axis deviation and no right ventricular hypertrophy. Here there is Himalayan 'P' wave.

2. Diseases of conducting system of the heart

Causes

1. Sclerodegeneration
2. Ischemia
3. Rheumatic fever
4. Genetic

5. Infiltrative
6. Endocrine
7. Idiopathic
8. Familial

3. Orifice

Tricuspid valve (Orifice) size	:	10 – 12.5 cm^2
Pulmonary valve (Orifice)	:	2.5 – 4 cm^2
Mitral valve	:	4 – 6 cm^2
Aortic valve	:	2.6 to 3.5 cm^2

4. Causes of ischemic chest pain in the young

1. Coronary AV fistula
2. Abnormal origin of left coronary artery from the pulmonary trunk
3. Heavy smoking
4. Progeria
5. Laurence-Moon-Biedl syndrome
6. Werner's syndrome
7. Pseudoxanthoma elasticum
8. Restrictive cardiomyopathy
9. Severe anemia
10. Severe aortic stenosis

5. Causes of ischemic chest pain

1. Coronary atherosclerosis
2. Aortic stenosis
3. Anemia
4. Atrial tachycardia
5. Thyrotoxicosis
6. Coronary artery spasm
7. Coronary aterial embolism (or) thrombosis
8. Coronary ostial stenosis
9. Arteritis of coronary artery

10. Restrictive cardiomyopathy (IHSS)
11. MVPS
12. Mitral stenosis
13. Primary pulmonary hypertension
14. HOCM
15. SVT
16. AR – due to syphilis

6. Cardiac causes of chest pain

1. Angina pectoris
2. Myocardial infarction
3. Acute pericarditis
4. Cardiomyopathy
5. Acute dissection of aorta
6. Aneurysm of thoracic aorta – erosion of vertebra
7. Shoulder hand syndrome
8. Pulmonary embolism

7. Various forms of angina

1. Classical angina pectoris (Heberden's angina) (effort angina)
2. Prinzmetal angina (Atypical angina)
3. Decubitus angina
4. Reversed angina
5. Second wind angina
6. Preinfarction angina (Intractable angina)
7. Unstable angina
8. Ingravescent angina

8. Factors modifying angina

1. Extent of luminal narrowing of coronary artery
2. Site of embolus or obstruction
3. State of collaterals
4. Underlying cardiac lesions

9. Predisposing factors for angina

1. Heavy smoking
2. Obesity
3. Diabetes mellitus
4. Hypertension
5. Left ventricular failure
6. Hyperlipidemia
7. Xanthelasma
8. Oral contraceptives
9. Sedentary living

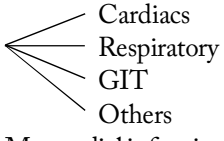
10. Signs of hyperlipidemia

1. Xanthoma – over tendons
2. Arcus senelis
3. Atheromatous arteries
4. Xanthelasma – over eyelids

11. Cardiac causes of edema

1. CCF
2. AV fistula
3. Cor pulmonale
4. Pericardial effusion

12. Causes of retrosternal chest pain



1. Myocardial infarction
2. Pericarditis
3. Syphilitic aortitis
4. Aneurysm of arch of aorta
5. Trachitis
6. Mediastinitis

7. Mediastinal emphysema
8. Esophagitis
9. Hiatus hernia

13. Causes of hematogenous pericardial effusion

1. TB
2. Injury—direct/indirect—penetrating/non penetrating
3. Malignancy
4. Uremic pericarditis—occasionally
5. Following anticoagulant therapy in myocardial infarction
6. Rheumatic fever
7. Following cardiac surgery
8. Rupture of heart and aortic dissection

14. Complications of infective endocarditis

1. Mycotic aneurysm at cerebral artery bifurcation, aortic root, etc.
2. Myocardial abscess
3. Conduction defects
4. Rupture of chordae tendineae
5. Destruction of valves – producing valvular insufficiency
6. Aortic incompetence
7. Embolic manifestations in brain, kidney, spleen, GI tract, heart and extremities
8. Osteomyelitis
9. Myocardial infarction
10. Focal myocarditis
11. Pericarditis with effusion

15. Causes of bad prognosis of infective endocarditis

1. Development of complications like CCF
2. Multivalvular lesion
3. Choosing inappropriate drugs
4. Delay in starting the treatment

5. Old age
6. Failure to detect the organism in culture and not able to give the correct drug
7. Infection with multiple organisms
8. Infection with gram-negative *Bacillus*
9. Infection with fungus
10. Immunocompromised individuals
11. Other system involvement

16. Low-risk of infective endocarditis seen in:

1. Mitral stenosis
2. MVPS
3. Tricuspid valve lesion
4. Pulmonary valve lesion
5. ASD (Septum secundum type)

17. Commonest cause of infective endocarditis in acquired heart disease is mitral leak.

18. Pallor without anemia: seen in shock and myocardial infarction.

19. Jaundice in CVS disorders

1. Severe CCF – liver congestion
2. Pulmonary thromboembolism - ↑ serum bilirubin and jaundice
3. Recent cardiac surgery – serum hepatitis
4. Prosthetic valves – serum hepatitis
5. Anemia – blood transfusion causing serum hepatitis
6. Hypertension patients who are on long-term methyldopa therapy
7. Infective endocarditis

20. Causes of fever in CVS disorders

1. Rheumatic fever
2. Infective endocarditis
3. Pericarditis – TB common

4. Atrial myxomas
5. Pulmonary embolism and infarction
6. Venous thrombosis
7. CCF – mild ↑ of temperature
8. Polyarteritis nodosa
9. Temporal arteritis
10. Aortoarteritis

21. Causes of vomiting in CVS disorders

1. Myocardial infarction
2. CCF
3. As a part of constitutional symptom as in arterial myxoma, etc.
4. Toxic effects of drugs like digoxin

22. Causes of bruit in the abdomen (arterial)

1. Normally in young and thin individuals rarely
2. Renal artery stenosis
3. Superior mesenteric artery obstruction
4. Compression of celiac axis
5. Pancreatic tumor pressing over the splenic artery
6. Abdominal aortic aneurysm
7. Tumors of liver – mainly primary

23. Venous

1. From IVC in some individuals normally.
2. In cirrhosis with portal hypertension (Because of the opening up of umbilical veins). The venous hum is heard midway between xiphisternum and the umbilicus. It is intensified when the patients stands up.
3. Arteriovenous – communications in the abdomen.

24. Parasites producing CVS disorders

1. Hydatid cyst
2. Chaga's disease – myocarditis and dysrlaythmias
3. African typanosomiasis (*T. rhodesiense*) – Myocarditis

4. Toxoplasmosis
5. Trichinosis } Myocarditis
6. Balantidiasis
7. Amoeliasis – Pericarditis

25. Predisposing factors for endocarditis

1. Intravenous drug users
2. Alcoholics } Acute
3. Previous (Cardiac/CVS) surgery
4. IV catheters
5. Tooth extraction
6. Minor surgery } Subacute
7. Rigid bronchoscopy
8. Tonsillectomy

26. Fungus producing CVS disorders

1. Infective endocarditis:
   a. Acute – *Candida* in IV users
      1. *Aspergillus*
      2. *Histoplasma*

27. Causes of organic tricuspid incompetence

1. Ebstein's
2. Rheumatic
3. Infective endocarditis
4. Heroin addict
5. Cardiomyopathy
6. Carcinoid tumor

28. Decapitated hypertension

After treatment if the BP comes down it is called decapitated hypertension. Clinical clues in a decapitated hypertension to say that he had hypertension.

- LVH
- Fundal changes
- Loud A2

29. Modification of clinical findings in MS patients with AF

1. Irregular pulse
2. Pulse deficit
3. Absent 'a' waves
4. S1 with changing intensity
5. MDM varies
6. Presystolic **Murmur** disappears

30. Features of left atrial myxoma

1. Changing – **Murmur** – from day-to-day
2. Changing – **Murmur** – in different positions of the patient
3. ↑ESR
4. Constitutional symptoms

31. Tricuspid incompetence

1. Raised 'V' wave
2. Pan systolic – **Murmur** – in tricuspid area
3. **Murmur** – louder in inspiration
4. Systolic pulsation of liver
5. Tender liver
6. RVH as evidenced by parasternal heave

32. Causes of refractive cardiac failure

1. Presence of cardiac disorders which require surgical intervention like:
   a. Constrictive pericarditis
   b. Thyrotoxicosis

   Which require intensive medical treatment like
   i. Silent aortic stenosis
   ii. Silent mitral stenosis
   iii. Infective endocarditis, etc.
2. Presence of precipitating factors like:
   - Respiratory infection
   - Urinary infection
   - Anemia
   - Arrhythmia

3. Others:
   a. Digitalis toxicity
   b. Electrolyte imbalance

33. Causes of atrial fibrillation

Cardiac → Endocardial / Myocardial / Pericardial

Endocardial
- Valvular lesions, MS, MR
- MVPS
- Endomyocardial fibrosis

Myocardial

WPW syndrome (paroxysmal AF)
- Myocardial infarction
- Myocarditis
- Cardiomyopathy (dilated)
- Sick sinus syndrome

Pericardial
- Pericarditis
- Cardiac tempanode
- Constrictive pericarditis

Congenital
- ASD
- Ebstein's anomaly
- Late stages of PDA

Noncardiac
1. Thyrotoxicosis
2. Anemia
3. Pulmonary thromboembolism
4. Lone atrial fibrillation
5. Old age
6. Alcohol
7. Pneumonia

34. Complications of atrial fibrillation

1. Congestive cardiac failure
2. Ischemia
3. Stroke
4. Hypotension
5. May progress to resistant AF

35. Causes of poor response to digoxin in AF

1. Hypokalemia
2. Alcoholism
3. Occult thyrotoxicosis
4. Infection
5. Pulmonary embolism
6. Tight mitral stenosis
7. Poor myocardial function

36. Forms of presentation of ischemic heart disease

1. Chest pain or chest discomfort
2. Syncope and sudden death
3. Pulmonary edema
4. CCF
5. Cardiac arrhythmias
6. Abnormal ECG
7. Profound fatigue
8. Abnormal X-ray chest

} No chest pain

37. Causes of acute aortic regurgitation

1. Infective endocarditis
2. Dissection of aorta
3. Hypertension
4. Heavy weightlifting
5. Injury
    a. Direct
        i. Precipitating
        ii. Non-precipitating
    b. Indirect

38. Causes of aortic incompetence

1. Syphilis
2. Dissecting aneurysm
3. Aneurysm of sinus of Valsalva
4. Rheumatoid arthritis
5. Marfan's syndrome
6. Ehlers-Danlos syndrome
7. Ankylosing spondylitis
8. Rheumatic fever
9. VSD with prolapse of the aortic valve
10. Bicuspid (congenital) aortic valve
11. Systemic hypertension
12. Infective endocarditis
13. Injury
    a. Direct
        i. Penetrating
        ii. Non-penetrating
    b. Indirect
14. Aortic dissection

39.

Rheumatic aortic incompetence	*Syphilitic aortic incompetence*
1. I sound loud	I sound may be soft
2. Calcification of valve +	Calcification of aortic wall + cusps
3. Not so	Murmur may be of musical quality
4. Associated aortic stenosis will be present	Not associated with aortic stenosis
5. Better heard in 2nd aortic area	Better heard in aortic area

40. Causes of dilatation of aorta

1. Syphilitic aortic aneurysm
2. Traumatic aneurysm

3. Dissecting aneurysm
4. Coarctation of aorta
5. Associated with Marfan's syndrome
6. Atherosclerotic
6. Aortic stenosis with poststenotic dilatation
7. Mycotic aneurysms

41. Causes of hemorrhagic pericardial effusion

1. Aortic dissection
2. Trauma
3. Metastatic carcinoma
4. Hemorrhagic carditis
5. Rupture of heart
6. Drugs: anticoagulants

42. Viral causes of pericarditis

1. Coxsackie A and B
2. Echovirus

43. Causes of purulent pericarditis

1. Pyogenic infection
2. Subphrenic abscess
3. Amoebiasis
4. Pneumonia
5. Infective endocarditis
6. Puerperal sepsis
7. Fungal infections
   - actionomycosis
   - coccidioidomycosis
8. Parasites
   - Guinea worm (*Dracunculiasis*)
   - Hydatid (*Echinococcus*)

44.

Myocardial infarction	*Pulmonary infarction*
1. Serum glutamic oxaloacetic transaminase (SGOT) is ↑	Normal
2. No change in serum bilirubin	Mild↑ in serum bilirubin
3. X-ray chest – Normal lungs	↑density in the lungs
4. Not so	Thrombophlebitis in remote areas may be seen (as in calf muscle)
5. Pleural involvement is not seen	Pleural rub and effusion may be seen
6. Previous history of ischemia +	Not so
7. No pleuritic pain	Pleuritic pain +
8. Hemoptysis is not seen	More common

45. Causes of painless pericarditis

1. Uremia
2. Myxedema
3. Tuberculosis
4. Mycotic infections
5. Chronic constrictive pericarditis
6. Irradiation
7. Tumors
8. Connective tissue disorders
9. Drugs, e.g. procainamide, hydralazine

46. Causes of painful pericarditis

1. Pyogenic infection
2. Viral infection
3. Rheumatic fever
4. Collagen diseases
5. Trauma
6. Cardiac surgery (after)

47. Dangers of dissecting aneurysm of aorta (complications)

1. Aortic regurgitation
2. Myocardial infarction – because of occlusion of coronary ostia
3. Hemopericardium
4. Cardiac tamponade
5. Shock and hypotension
6. Asymmetric pulses in different limbs
7. Death

48. Pulsation near sternoclavicular joint – causes

1. Persistent right aortic arch
2. Aneurysm of aorta
3. Dissection of aorta

49. Causes of bruit in supraclavicular fossa

Subclavian steal syndrome

50. Causes of arterial thrombosis

1. Atherosclerosis
2. TAO
3. Arteritis
4. Sludging from polycythemia
5. Infections – phlebitis
6. Trauma
7. Hyperglobulinemia

51. Causes of AV fistula

I. Congenital

II. Acquired :
   a. Stab injury
   b. Gunshot injury
   c. Erosion from neoplasm
   d. Infectious arteritis

S.No.	*Congenital AV fistula*	*Acquired AV fistula*
1. Associated lesion	Hemangiomas may be seen	Not so
2. Age of onset	Signs are seen in early age	Not so
3. Trauma	No history of trauma	History of trauma +
4. Size	Usually small	Not small
5. Signs	Signs may not be evident as they are small	Evident as they are large
6. Thrill	Thrills and bruit may be absent	May be present
7. Limb size	Affected limb may be hypertrophied	Not in early stages
8. Sound	↑sweating and hypertrichosis is more pronounced	Less pronounced
9. Branham's sign	Branham's sign is less pronounced	More pronounced

52. The heart uses for the metabolism the following chemicals

1. Free fatty acids – most common
2. Glucose
3. Lactate
4. Pyruvate
5. Acetoacetate and β-(OH)-butyrate, ketone bodies
6. Amino acids

in this order

53. Enzymatic reactions of the heart are:

1. Citric acid cycle
2. Oxidative phosphorylation

54. Heart consumes at resting stage 6.5 to 10.0 ml of O_2 per 100 gm of tissue per minute.

55. O_2 consumption of heart depends on:

1. Rate of contraction
2. Temperature (Body)
3. Cardiac muscle mass

56. Normal heart utilizes

1. About 11 gm of glucose
2. About 10 gm of lactic acid ↓ per 24 hours

57. General examination in relation to cardiac disorder

1. Body configuration (skeletal)
   a. Marfan's syndrome – Aortic regurgitation, mitral regurgitation,
      Tricuspid regurgitation
      Dissection of aorta
      Pulmonary artery dilatation
      Aneurysm of sinus of valvula
   b. Homocystinuria – Thrombosis of intermediate size arteries
   c. Pickwickian syndrome – Cor pulmunale
   d. Cushing's syndrome – Hypertension
   e. Growth retardation – Congenital cyanotic heart disease
   f. Well developed upper segment and ill developed lower segment with - coarctation of aorta thin lower limbs
   g. Pectus excavatum - Innocent cardiac murmur
   h. Straight-back syndrome – RBBB
   i. Kyphoscoliosis
   j. Mucopolysaccharidosis – Ischemic heart disease
   k. Trisomy
   l. Down's syndrome ↓ Congenital heart diseases
   m. Turner's syndrome – Coarctation of aorta
   n. Klippel-Feil syndrome – VSD
   o. Myotonia dystrophica – Conduction disorder/ myocardial disease

p. Muscular dystrophy – Conduction disorder/ myocardial disease
q. Acromegaly – Conduction defects
r. Myxedema – Pericardial effusion
s. Thyrotoxicosis – Hyperdynamic state
t. Cleft lip
u. Cleft palate ↓ Congenital heart disease

58.

S.No.	*Dilated cardiomyopathy*	*HOCM*
1. Angina	Less common	History of angina more common
2. Syncope	Less common	Syncope is more common
3. Cardiac failure	Failure symptoms more common	Less common

59. Aims of doing echo in myocardial infarction

1. To find out ejection fraction
2. To find out wall motion abnormality
3. To find out clot, if any
4. To find out aneurysm, if any

60. Cardiac causes of sudden death

1. Mitral valve prelapse syndrome (MVPS)
2. Cardiomyopathy
   a. Dilated cardiomyopathy → VF
   b. Hypertrophic obstruction cardiomyopathy (HOCM)
3. Myocardial infarction
4. Cardiac ruptures – rupture of ventricular aneurysm, etc.
5. Cardiac injuries
6. In athletes after heavy exertion
7. Tumors of heart – sarcoma
8. Myocarditis

9. Pulmonary hypertension (primary or secondary)
10. Aortic stenosis
11. Pulmonary thromboembolism
12. Arrhythmias
    a. V.tach
    b. VF
13. Scurvy

61. Sudden death

Natural/rapid progression from symptoms to death – 1 hour with or without pre-existing disorders. Death occurs at unexpected time and mode.

62. Causes of PND

1. LV failure – MS
2. Dilated cardiomyopathy

63. Causes of cardiac failure

1. Valvular heart disease
2. Myocardial diseases
    a. Myocarditis
    b. Myocardial infarction
    c. Atrial myxoma
    d. Cardiomyopathy (DM)
3. Pericardial diseases
    a. Pericardial effusion
    b. Cardiac tamponade
4. Others
    a. Recurrent pulmonary embolism
    b. Pulmonary hypertension
    c. Infective endocarditis
    d. Thyrotoxicosis
    e. Anemia
    f. Cor pulmonale

g. Beriberi
h. Injury to heart
i. Sarcoidosis
j. Hemochromatosis
k. Uremia

5. Congenital heart diseases – PDA

64. Cardiotoxic drugs

1. Doxorubicin (adriamycin) CCF
2. Irradiation (to heart)
3. Cyclophosphamide
4. Daunorubicin – Cardiomyopathy (DM)
5. Cobalt – Cardiomyopathy (DM)
6. Tricyclic antidepressants
7. Phenothiazines — Arrhythmias
8. Emetine
9. Lithium
10. Alcohol – Dilated cardiomyopathy

65. Causes of refractory cardiac failure

1. Ventricular aneurysm
2. Cardiac tumors
3. Cardiomyopathy – Dilated
4. Sarcoidosis
5. Hemochromatosis
6. Underlying correctable surgical causes till correction is made, e.g. patent ductus arteriosus (PDA)
7. Atrial myxoma
8. Beriberi

66. Causes of resistant arrhythmias

1. Ventricular aneurysm
2. Cardiac tumors
3. Sarcoidosis

67.

S.No.	*Aortic stenosis*	*Idiopathic hypertrophic subaortic stenosis (IHSS)*
1. Thrill location	Thrill and murmur better appreciated in aortic area	Better appreciated in left sternal border
2. Radiate	Murmur radiates to carotid	Not so
3. Murmur	Ejection murmur and is low pitched and rasping quality (valvular AS)	Murmur is medium pitched
4. Ejection	Ejection sound is common (valvular)	Not common
5. AR	Associated AR is common (diastolic murmur)	Not so

68.

S.No.	*Aortic stenosis*	*Aortic sclerosis*
1. Syncope	Syncope is common	Not so
2. Angina	Angina is common	Not so
3. Heart failure	Heart failure +	Not so
4. Thrill	Thrill is +	Absent
5. S4	S4 is audible	Not so
6. Peripheral pulses	Peripheral pulses small volume	Not so
7. Murmur	Late peaking of systolic murmur +	Not so

69. Contraindications for stress testing

1. Acute or impending myocardial infarction
2. Unstable angina
3. Acute myocarditis
4. Acute pericarditis

5. Severe aortic stenosis
6. Uncontrolled hypertension
7. Uncontrolled cardiac arrhythmias
8. II° or III° AV block
9. Non-cardiac aortic illness
10. Left main coronary artery disease

70. Factors to be considered in treating an arrhythmia

1. O_2 carrying capacity – state
2. Status of heart (diseased or otherwise)
3. Nature of arrhythmia
4. Previous experience including treatment taken by the patient.

71. Shock

Disparity between circulating blood volume and volume of vascular bed.

72. Types

1. Cardiogenic - pump failure
2. Hypovolemia – volume loss
3. Septicemic – toxins

73. Clinical features of shock

1. Cold and clammy periphery
2. Systolic BP less than 90 mm Hg
3. Small volume pulse
4. Tachycardia
5. Urine output less than 20 ml per hour
6. Urinary sodium concentration less than 30 mEq/liter
7. Metabolic acidosis
8. Impaired level of consciousness

74. Complications of inferior wall infarction

1. RV infarct
2. Heart block (arrhythmias) usually temporary need not be treated aggressively

3. Thrombus
4. Rupture } Rare

75. Physiological changes in cardiac function in old age

1. Heart size may ↓ unless there is HBP/congestive heart failure, etc.
2. Heart rate ↓
3. Stroke volume ↓
4. Cardiac output declines by 30 to 40%
5. Endocardium becomes thickened
6. Myocardium becomes less elastic and more rigid
7. Calcification of walls of arteries
8. Vessel wall lose vasomotor tone
9. Degeneration of sinoatrial node
10. Sclerosis of valves like aortic and mitral valve

76. Usefulness of carotid sinus (vagotonic massage)

1. To revert to normal heart rate in supraventricular tachycardia
2. In angina pectoris, carotid sinus massage causes ↓ HR and angina pain subsides, whereas it has no change if it is nonanginal pain. This is called LEVINE test.
3. In atrial flutter the 'p' wave may fall on QRS (ascending limb) and may distort the QRS. It may appear as delta wave. In this situation, carotid sinus massage helps us to see the hidden p wave clearly as F (flutter) waves. Carotid sinus massage does not abolish atrial flutter.
4. Sinus arrhythmia is accentuated in carotid sinus massage.
5. Carotid sinus massage may abolish extrasystolic atrial tachycardia.

77. Diabetic involvement of heart

1. Dilated cardiomyopathy
2. Ischemic heart disease, e.g. ↑ cholesterol
3. Multifocal atrial tachycardia

78. CVS disorders due to alcohol

1. Dilated cardiomyopathy
2. Beriberi
3. Atrial premature beat
4. Ventricular premature beat
5. Supraventricular tachycardia
6. Atrial fibrillation

79. Indications for long-term anticoagulants in cardiac patients

1. Those who are on prosthetic valves
2. Dilated cardiomyopathy if there is chance of embolism
3. Primary pulmonary hypertension
4. AF with embolic symptoms

80. Effects of nicotine on heart

1. ↑ heart rate
2. ↑ systemic BP
3. Reduces exercise capacity
4. By forming carboxyhemoglobin (due to CO) causes ischemia
5. Causes coronary vasospasm
6. Impairs pulmonary functions
7. ↑ platelet adhesiveness
8. ↑ atheromatous plaque
9. Sudden death

81. Isotonic contraction (dynamic exercise), e.g. walking, running, swimming isometric contraction (static exercise), e.g. carrying or lifting heavy objects, shot put, heavy weight lifting

S.No.	*Isotonic*	*Isometric*
1. Exercise	Dynamic	Static
2. Myocardial O_2 demand	Less	Myocardial O_2 demand is more
3. Sympathetic response	Less	Sympathetic response is more
4. BP elevation	Less	BP elevation is more

82. Mechanisms of angina due to cold weather

↑ in peripheral resistance
↑ in cardiac work load
↑ coronary vasomotor tone
Skin cooling is most important mechanism than inhaling cold air.

83. Mechanism of ischemic pain after meals

1. Shift of blood flow to GIT
2. Transient change in blood clotting mechanism and change in viscosity of blood in response to postprandial hyperlipidemia
   a. ↑ platelet aggregation
   b. ↑ in HR
   c. ↑ coronary vasomotor tone

84. Causes of ischemia in syphilitic aortic regurgitation

1. Coronary osteal stenosis
2. Syphilitic coronary arteritis involving proximal coronary arteries

85. When to clinically suspect ventricular aneurysms after an infarct

1. If there is resistant failure
2. If there is resistant arrhythmias
3. If there is persistent chest pain
4. If embolic manifestations develop (since aneurysm dilatation is ideal for clot formation)
5. Persistent ST elevation

86. Hemoptysis in mitral stenosis

1. Pulmonary apoplexy – massive hemoptysis due to rupture of bronchial veins.
2. Blood stained sputum in PND
3. Pink frothy sputum in pulmonary edema (rupture of alveolar capillaries)
4. Episodes of chronic bronchitis (winter bronchitis)
5. Pulmonary infarction in patients with CHF
6. Pulmonary hemosiderosis

87. Differences in mitral stenosis and mitral incompetence

S.No.		*Mitral stenosis*	*Mitral incompetence*
1.	Left atrial enlargement	Left atrial enlargement is less marked	Left atrial enlargement is more marked
2.	Left atrial pressure	Left atrial pressure is more marked	Less marked
3.	Pulmonary hypertension	Pulmonary hypertension is more common	Less common
4.	Atrial fibrillation	Atrial fibrillation is less common	More common
5.	Infective endocarditis	Infective endocarditis is less common	More common
6.	LV chamber	LV chamber is small	Large
7.	Sex	More common in female	—
8.	Mitral facies	Mitral facies is seen in severe MS	—
9.	Systemic embolic	Systemic emboli is more common	Less common
10.	Purity	Pure MS is more common	Pure MR is less common
11.	Acute pulmonary edema	Acute pulmonary edema is more common	Less common

88. Hemodynamically stable cardiac lesions

1. Mitral valve prolapse syndrome
2. Aortic sclerosis

89. Degenerative disorders of heart

1. Mitral valve prolapse syndrome
2. Aortic sclerosis

90. Complications of infective endocarditis – cardiac

a. Perforation of valve cusps producing AF, mitral regurgitation
b. Rupture of chordae tendineae
c. Postinflammation fibrosis
d. Calcification
e. Scarring

91. Complications of prosthetic valves

1. Malfunctioning of prosthetic valve
2. Obstruction to flow
3. Thrombus formation
4. Hemolysis
5. Infection
6. Degenerative changes

92. Features in acute MR

1. No cardiac enlargement
2. Acute pulmonary edema +
3. Acute LVF +
4. S4 may be present in addition to S3 due to ischemia

93. Chronic mitral regurgitation

1. Cardiomegaly +
2. S3+
3. No S4

94. Factors contributing to loud S1 in MS

1. Mobility of the valve
2. Diastolic pressure gradient across mitral valve
3. Contractile state of LV
4. Duration of PR interval

95. Chest pain in MS - consider

1. Associated AS, AR (syphilitic)
2. Severe MS
3. AF with RVR - ↓ coronary flow

4. Associated myocardial infarction
5. ↑ heart rate - ↓ coronary flow
6. Pulmonary hypertension
7. Right ventricular ischemia
8. Associated pulmonary embolism
9. Coronary artery embolism

96. Chest pain in MR – consider, associated

1. Myocardial infarction – ischemia CAHD
2. AS
3. MVPS

97. Murmurs

1. Standing – ↓ venous returns
   ↑ heart rate
2. Squatting – Transient ↑ in venous return
   ↑ in peripheral arterial resistance
   ↑ in the size of left ventricle
3. Valsalva maneuver ↓ venous returns
   ↓ size of LV and RV
4. Isometric contraction
5. Isotonic contraction

98.

S.No.	*Innocent murmur*	*Organic murmur*
1.	No organic cardiac lesion	There is lesion
2.	Usually systolic/diastolic continuous	Need not be systolic
3.	Usually heard in left sternal border/base	—
4.	Exercise ↑the murmur	Exercise ↓the murmur
5.	Valsalva maneuver has its effect on the murmur	Changes the murmur

99. To and Fro M **Continuous M**

S2 will be distinctly audibel S2 will be submerged in the M

100. Venous Hum

1. Frequently heard in normal children
2. Maximum over the base of neck on right side
3. Varies with the rotation of patients head
4. Varied with the compression with the ipsilateral veins
5. Increases in intensity on inspiration
6. It is louder in diastole
7. Usually disappears when the patient is in supine position

101. Osler nodes are seen in

1. Infective endocarditis
2. Gonococcal infection
3. Hemolytic anemia
4. SLE
5. Intra-arterial catheters

102. Noncardiac causes of sudden death

CNS	:	Intracerebral hemorrhage
		Subarachnoids hemorrhage
Abdomen	:	Diarrhea
Others	:	Severe bleeding
		Emotion
		Aspiration

103. Shoulder hand syndrome

Painful disability of shoulder appearing before or after pain, swelling and vasomotor changes in the hands and fingers. It may be associated with the following features:

- Myocardial infarction
- Cervical spondylosis
- Hemiplegia
- Trauma
- Arthritis of shoulder
- Malignancy — Lung
  Cerebral

- Herpes zoster
- Drugs – Phenobarbitone
  INH
  Ethanol amine

Appendages of skin

- Nail
- Hair
- Sebaceous of hands
- Secret glands

104. Congenital heart disease and cyanotic heart disease

a. ASD – ASD can occur in families as autosomal dominant inheritance.
b. Congenital and cyanotic heart diseases are:
   i. Tetralogy of fallot
   ii. Tricuspid atresia
   iii. Transposition of great vessels
   iv. Persistence truncus arteriosus
   v. Total anomalus pulmonary venous drainage
c. Rare causes of syncope
   i. Glossopharyngeal neuralgia
   ii. During bronchoscopy
   iii. During esophagogastroscopy
   iv. Irritation of pleura and peritoneum
   v. Associated with migraine
   vi. Hyperventilation
d. Cyanosis with clubbing with
   i. Ejection systolic murmur at PA → Fallot
   ii. Pansystolic murmur at PA → double outlet right ventricular
   iii. No murmur at PA (but elsewhere) → pulmonary AV fistula
   iv. Continuous murmur at PA → pseudotruncus
e. Difference between neck vein and arterial pulsation

S.No.	*Central Cyanosis*	*Peripheral cyanosis*
1.	Seen in the following areas: central (inner side of lip, mouth) and peripheral areas (fingers, arm, nose, etc.)	Seen in: only in peripheral areas
2.	Extremitis warm	Extremitis are cold to touch
3.	Hemoglobin level is high	No so
4.	Administration of oxygen relieves cyanosis if it is due to respiratory cause	Not so
5.	Exercise immediately increases cyanosia	Not so
6.	Polycythemia +	Not so
7.	Usually associated with clubbing of digits	—
8.	Due to more of unsaturated blood	Due to poor extraction of oxygen from the blood to the tissues
9.	Dipping the hands in warm water, cyanosis is more pronounced	Cyanosis is abolised

S.No.	*Arterial pulsation*	*Venous pulsation*
1.	No definite upper level	Has got a definite upper level
2.	More abrupt always single	It is more sinuous, double, low amplitude, slowly swelling and subsiding slower, more undulating.
3.	Seen in the anterior triangle of neck medial-to-medial border of sternomastoid. Better felt against outer side of trachea	Seen in posterior angle of neck, just lateral to sternomastoid.

Contd...

Contd...

S.No.	*Arterial pulsation*	*Venous pulsation*
4.	Better seen and felt	Better seen. Not felt. (Exception: It is felt if the pressure goes above 250 mm of water). Occasionally giant 'a' wave is palpable.
5.	Not so	Nervous pulsation may be eliminated when applying pressure at the root of neck.
6.	No change in phases of respiration	Pulsation level comes down in inspiration and goes up in expiration.
7.	No change by Valsalva maneuver	Valsalva maneuver ↑ the JVP. (Both pressure and distersion is ↑)
8.	Hepatojugular reflex not possible	Possible if there is no obstruction
9.	Has one positive wave	Two prominent positive waves
10.	Not so	JVP becomes more prominent in recumbent posture and less. Prominent in sitting posture, i.e. level of pulsation changes with position.

f. Raised neck vein without pulsation
SVC obstruction

g. Failure of JVP to descend in inspiration in Kussmaul's sign seen in:
   i. Constrictive pericarditis
   ii. SVC obstruction
   iii. Tricuspid stenosis
   iv. PHT

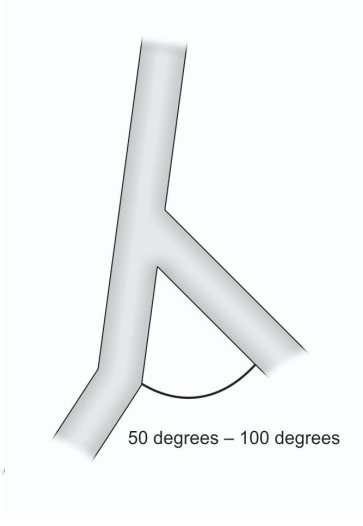
5 Chapter Respiration

1. **Chest (rib) cage variations.**
    1. Sometimes there will be cervical ribs (13 in number) and it will articulate with C7 vertebra. The tip of cervical rib may be:
        a. Floating or
        b. Join the sternum or
        c. Join I rib
2. **Sometimes the 8th rib may join directly with sternum.**
3. **Sometimes the 10th rib may develop as a floating rib.**
4. **There may be bifid ribs.**
5. **Lumbar ribs. Additional rib and it may articulate with LI vertebra.**
6. **Sometimes there may be only 11 pairs of ribs.**
7. **Sometimes there may be fused ribs. Here there may be associated vertebral anomalies like hemivertebra.**
8. **Rarely sternal angle occurs at the level of 2nd costal cartilages. (usually the distance between jugular notch and sternal angle is 5 cm. Here it will be more than 5 cm.**
9. **The left lung is 20% less in volume compared to right lung.**
10. **Primary muscle of respiration – diaphragm and intercostal.**

11. Accessory muscle of respiration. Intercostals, sternomastoid platysma, rhomboids, ribs muscles of neck.

- 7th rib is the longest rib.
- 8th and 9th ribs are more oblique.
- I rib could not be felt as it is covered by clavicle
- Tip of 12th rib corresponds to the body of L2 vertebra
- Scapula extends from 2nd to 7th rib
- Inferior angle of scapula ends at 7th rib
- Sternum is long in male, short in female
- Xiphisternum artifices at 40th year of age
- Angle of Louis corresponds to D4 – 5 vertebra (angle of Louis is called as angle of Ludwig)
- During vigorous inspiration the diaphragm can descend up to 5 – 10 cm downwards
- Bucket handle movements elevate 2 to 10 ribs ↑ transverse diameter
- Pump handle movement – movement at the costovertebral joints also elevates the ribs in inspiration. This is pump handle movement. 2nd to 6th ribs are mainly involved. ↑ anteroposterior diameter
- Nipple lies at 4th intercostals space
- Joints involved in movements of respirations
  i. Costovertebral
  ii. Costochondral
  iii. Sternocostal
- Roots of lungs (Hilum) the opposite to T5 to T7 vertebra
- Structures seen at the hilum of lung
  i. Bronchus
  ii. Bronchial vessels
  iii. Pulmonary vessels
  iv. Nerves
  v. Lymphatic
- Intraplerual pressure -2.5 to -6 mm Hg

- Larynx extends from the root of tongue to the beginning of trachea
- Larynx is at the level of C3,4,5 and C6 vertebral (Larynx)
- It is about 4 – 5 cm in male and 3 – 4 cm in female
- The trachea is about 10 – 11 cm long. It starts from larynx (at the level of C6 vertebra) to end near the upper border of T5 vertebra. (Bifurcation of trachea is at T4)
- The angle between right and left bronchus is called carinal angle. It is from 50° - 100°
- Carina acts as a last line of defense mechanism – produces a violent cough on irritation by foreign bodies



- Portions above the lower border of cricoid cartilase is upper respiratory tract. And below, it is the lower respiratory tract.
- Functions of lower respiratory tract:
  i. Conduction of air to and from alveolus

- Functions of upper respiratory tract:
  i. Conduction of air (CO_2 and O_2)
  ii. Helps in swallowing
  iii. Helps in speech
  iv. Helps in smell
  v. Conditions the air (warm and humidifies and filter) before allowing it to pass to lower respiratory tract. Acts as an air conditioner.
- Tracheobronchial tree normally secretes about 60 – 90ml of secretions per day.
- Sometimes the left lower lobe has its lymphatic drainage through the right tracheobronchial nodes and also through right supraclavicular nodes.
- More than 25 leukocytes in the sputum examination (Gram's stain) per high power field is suggestive of respiratory infection.
- Sputum:
  i. Mucoid → Br. Asthma/PT/Ch. Bronchitis
  ii. Purulent → Infection/pyogenic/lung abscess/ bronchiectasis, etc.
  iii. Red current jelly → *Klebsiella pneumoniae*
  iv. Rusty → Pneumonia
  v. Black → Smoke or coal dust inhalation
  vi. Pink, frothy → Pulmonary edema

2. Nonrespiratory functions of lungs

1. Acts as a reservoir of blood.
2. Filters blood – thereby prevents microthrombi from reaching brain and other vital organs, by removing the thrombi from circulation.
3. Synthesizes phospholipids which is a component of pulmonary surfactant.
4. Helps in maintaining protein metabolism (under abnormal conditions proteases are librated from leukocytes and

macrophages in the lungs. These proteases breakdown proteins in lungs. This may lead on to emphysema.

5. Metabolizes vasoactives substances as follows:
   a. Actives angiotensin I to angiotensin II
   b. Inactivates:
      i. Bradykinin
      ii. Serotonin (SHT)
      iii. Histamine
      iv. PGE, PGF2 and
      v. Norepinephrine
6. Secretes special immunoglobulins particularly IgA in the bronchial mucus and helps in the defence mechanism.
7. With the help of cilia and cough reflex, expels foreign bodies that has entered the respiratory tract.
8. The mast cells present in the respiratory system contains heparin and helps in the coagulation mechanism.
9. Elaborates the polysaccharide of bronchial mucus and thus helps the carbohydrate metabolism.
10. Helps to excrete some of the drugs and chemicals.

3. Functions of upper respiratory tract

1. Allows O_2 and CO_2 (atmospheric air to enter and leave the lungs)
2. Nasal passages act as an air conditioner. They warm, filter and humidity the inspired air.

4. Causes of halitosis (Foul smell)

1. Lung abscess
2. Bronchiectasis
3. Gangrene of lung
4. Excessive smoking
5. Oral sepsis
6. Rarely in normal individuals
7. Anaerobic infection of lung

5. Causes of foul smelling sputum

1. Lung abscess
2. Bronchiectasis
3. Gangrene of lung
4. Excessive smoking
5. Oral sepsis
6. Rarely in normal individuals
7. Anaerobic infection of lung

6. Abnormal shape of chest

1. Rickets
2. Rickety rosary
3. Harrison's succus
5. Kyphosis
6. Scoliosis
7. Pectus carinatum (Pigion chest)
8. Pectus excavetum
9. Ankylosing spondylitis of vertebra producing fixed chest
10. Due to poliomyelitis
11. Funnel chest

7. Pulmonary causes

1. Fibrosis, collapse
2. Pleural effusion, pyothorax, penumothorax, etc.
3. Emphysema
4. COPD – Barrel chest

8. *Flail chest:* In chest injuries the risk is fractured and loose segment of chest wall moves paradoxically, i.e. fracture portion moves in during inspiration and not during expiration. There will be at 2 sites and segment of rib is separated.

9. *Frozen chest:* **Restricted movement of the chest.**

10. Types of respiration

Abdominal : Seen in male
Thoracic : Seen in female
Abdominal : in children

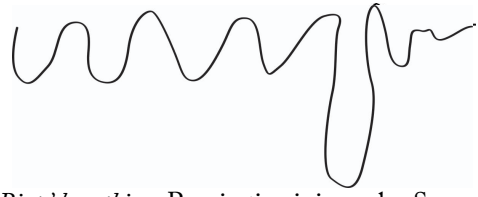
1. *Cogwheel breathing:* Occurs in normal but nervous people and in chronic nasal obstruction.
2. *Puerile breathing:* Harsh breathing occurs in children.
3. *Cheyne-Stokes breathing (also called periodic breathing)* successive respiration gradually get deeper and deeper till a maximum is attained and then fall off again until a pause of complete apnea occurs, to be followed by another wave of gradually deepening and then diminishes lung respiration. The pause may last for ½ min and the whole cycle is completed in less than 2 minutes.

Lesion is in bilateral hemisphere – brainstem is intact.

Seen in:
a. CCF – late stages
b. Renal failure – uremia
c. Severe pneumonia
d. ↑ intracranial pressure
e. Narcotic poisoning
f. Rarely in old individuals during sleep
g. CVA
h. DKA

4. *Kussmaul's respiration (Air Hunger):* Deep breathing through a mouth. Regular sighing respiration. The rate may be normal, fast or slow. Seen in:
   a. Diabetic ketoacidosis
   b. Uremic acidosis

c. Salicylate poisoning
d. All forms of acidosis.



5. *Biots' breathing:* Respiration is irregular. Sometimes slow, sometimes rapid; sometimes superficial (shallow) sometimes deep. This irregularity is not in regular order. Similar to atrial fibrillation. Seen in meningitis.

6. *Stertorous breathing:* Due to vibrations of soft tissues of nasopharynx, larynx and cheeks due to loss of muscle tone. Occurs in coma of any cause, normally in some people in sleep (snoring).
7. *Rattling breathing:* Due to vibration of mucus present in main airways due to ↓cough reflex.
8. *Stridulous breathing:* High pitched whistling sound due to passage of air through partially closed glottis. Seen in:
   a. Edema of vocal cards
   b. Neoplasm
   c. Diphtheritic membrane
   d. Abscess of pharynx
   e. Foreign body in trachea and larynx
9. *Apneustic breathing:*
   Causes:
   a. Pontine infarction
   b. Basilar artery occlusion

c. Meningitis

10. *Cluster breathing:*

Causes:

1. Medullary dysfunction
2. Poisoning of narcotics
3. Poisoning of barbiturates

11. *Ataxic breathing:*

Causes:

1. Medullary lesion
2. Pontine Hge
3. Cerebellar Hge

12. *Shallow breathing:*

Cause: Coma

13. *Central neurogenic hyperventilation breathing:*

Causes:

1. Brainstem dysfunction
2. Tentorial herniation

14. *Agonal respiration breathing:*

Cause: Terminal event
Periodic breathing is sometimes seen in preterm infants.

11. Causes of dry cough

1. Laryngitis
2. Trachitis
3. Bronchitis
4. Due to irritants like gases and fumes
5. Sometimes in bronchiectasis

12. Causes of productive cough

1. Lung abscess
2. Bronchiolectasis
3. Anabolic infection of lung
4. Fungal injection of lung

13. Causes of nocturnal cough

1. Mitral stenosis
2. Left ventricular failure } Due to pulmonary congestion
3. Ch. bronchitis
4. Ch. infection of nose and sinuses. If the cough lasts for more than 2 to 4 weeks it is called chronic cough.
5. Br. asthma

14. Types of cough

1. *Brassy cough:* Intrathoracic tumors (especially aneurysm, or mediasternal tumor) can press on the trachea and produce cough with a metallic quality. Tracheal or bronchial involvement +.

2. *Bovine cough:* If a tumor involves, the recurrent laryngeal branch of vagus nerve and interferes with the normal movement of vocal cords, the cough loses its explosive character and becomes prolonged and wheezing like that of a cough.
3. Whooping cough.
4. *Hysterical cough:* It is loud and barbering.
5. *Barking (croupy) cough:* Pathology is in subglottic area.
6. *Paroxysmal cough:* Br. asthma, LV failure.
7. Persisting cough more in the morning with production for months/years– Ch. bronchitis

15. Rate of respiration

44/min – Newborn
14–18/min – Adult male
Slightly ↑ – In adult female

S.No	*Hemoptysis*	*Hematemesis*
1. History	History of respiratory disease +	History of GIT disorders +
2. Blood	Coughing out blood	Vomiting of blood
3. Sputum	Associated sputum +	Associated food particles +
4. Blood color	Blood may be frank red or frothy	Coffee ground or frank
5. pH	pH is blood is alkaline	Acidic
6. Pain	Associated dyspnea chest pain +	Associated pain abdomen, history of Ch. DU or analgesic intake +

16. Causes of bradypnea: Rate less than 12/min.

Rate is ↓ rhythm is regular breathing is deepen.

1. Uremia
2. Diabetic coma

3. Severe alcohol intoxication
4. ↑ ICT
5. Drugs like morphine

17. Jaundice in respiratory disorders

1. Pulmonary thromboembolism → pulmonary infarction
2. Pneumonic consolidation

18. Anemia in respiratory disorder

1. Pulmonary tuberculosis
2. Malignancy – lung; pleura
3. Fungal infection of lung

19. Respiratory causes of dyspnea (Spontaneous)

Sudden dyspnea: – Pneumothorax
Massive pleural effusion
Pulmonary embolism
Aspiration
Adult respiratory distress syndrome (ARDS)

Others : 1. Pleurisy
2. Pneumonia
3. Pl. effusion
4. Pneumothorax
5. Hydropneumothorax
6. Fibrosis
7. Collapse
8. Br. asthma
9. Ch. bronchitis
10. Emphysema
11. Allergic alveolitis

20. Respiratory causes of cyanosis

Central : Ch. bronchitis
Emphysema

Fibrosing alveolitis
Pneumonia
Br. asthma
Cor pulmonale
Tension pneumothorax
Pulmonary embolism
Adult respiratory distress syndrome (ARDS)

21. Central and peripheral cyanosis: Cor pulmonale

Cyanosis without clubbing

1. Tension pneumothorax
2. Pul. embolism
3. Pneumonia
4. Emphysema

Respiratory causes of clubbing

1. Chronic suppurative lung diseases
    a. Lung absesss
    b. Bronchiectasis
    c. Empyema
2. Bronchogenic carcinoma
3. Chronic bronchitis
4. PT of long standing cases
5. Asbestosis
6. Fibrosing alveolitis
7. Cystic fibrosis
8. Pleural malignancy

22. Clubbing without cyanosis

1. Suppurative lung lesion
2. Bronchogenic carcinoma
3. Pulmonary tuberculosis of long duration
4. Asbestosis
5. Cystic fibrosis

23. Clubbing and cyanosis in RS disorders

1. Cor pulmonale
2. Fibrosing alveolitis
3. Ch. bronchitis

24. Cyanosis is evident if

1. Reduced Hb% is more than 5G/dl
2. Sulbhemoglobin is more than 0.5 g/dl
3. Methemoglobin is more than 1.5 g/dl

25. Respiratory causes of Pedal edema

1. Cor pulmonale → RV failure → edema
2. Malignancy → cachexia → Hypoproteinuria → edema
3. Chronic diseases like PT → loss of appetite → Hypoproteinemia → edema
4. Mediastinal obstruction → lymphatic and venous engorgement → edema

26. Causes of lymph node enlargement in respiratory diseases

1. TB	–	Cervical/Axillary
2. Malignancy	–	Secondaries
		Axillary
		Cervical

27. Causes of restricted movement of chest

Unilateral	–	Fibrosis
		Pl. effusion
		Pneumonic consolidation/collapse
		Pneumothorax
Bilateral	–	Ch. bronchitis
		Br. asthma
		Emphysema
		Massive ascitcs

28. Causes of acute (sudden) arrest of inspiratory movement

1. Acute inflammation of pleura
2. Ac. cholescytitis
3. Subdiaphragmatic abscess

29. Respiratory causes of venous enlargement in chest

1. Ca lung pressing over the IVC or SVC
2. Mediastinal tumor with obstruction

30. Respiratory causes of hemoptysis

1. Pulmonary tuberculosis
2. Pneumonia
3. Branchiolectasis
4. Bronchogenic carcinoma
5. Bronchitis
6. Fungal infection of lung
7. Foreign body respiratory passages
8. Pulmonary embolism
9. Lung abscesses
10. Goodpasture's syndrome
11. Bronchial rupture
12. Broncholithiasis
13. Hemosiderosis
14. Worm infestation, e.g. roundworm
15. Hamartoma
16. Telangiectasia of lung
17. Vasculitis – SLE, etc.
18. Wegener's granulomatosis
19. Rupture of pulmonary AV fistula

31. Palpable sounds over chest

RS: Crepitation - as tactile fremitus
Rhonchi

CVS: S1 - Mitral area ↑
P2

Thrills
Venous hum
Others: Subcutaneous emphysema
ribs

32. Differential diagnosis of crackling sound

1. Rales: lung
2. Pleural rub: Pleura
3. Rib: # rib
4. Subcutaneous emphysema: Subcutaneous plane
5. Muscles: Gas gangrene
6. Joint: Arthritis

33. Trapped lung: Long standing infections of pleura encases the lung and does not permit the expansion of lung. This is known as trapped lung.

34. Shock lung: There is pulmonary edema due to post-traumatic condition. Pulmonary edema is due to increased capillary permeability.

35. Causes of massive hemoptysis

1. PT – cavity
2. Lung abscess
3. Bronchiectasis
4. Bronchogenic carcinoma
5. Pulmonary thromboembolism
6. Pulmonary infarction
7. Erosion of a vessel either by a FB or broncholitis
8. Fungal infections
9. Mitral stenosis

36. Rare causes of hemoptysis

1. Pulmonary arteriovenous fistula, Wegener's granuloma hamartoma
2. Hamartoma
3. Telangiectasia of lung

37. Causes of respiratory failure

I. Trauma
- Head injury
- Injury to cervical spine
- Chest injury
- Chemical injury – Burns, alkali, NH4, gases
- Electrocaution
- Mediastinal emphysema

II. Upper airway obstruction
- Foreign bodies
- Infections – Abscess, diphtheria, etc.
- Angioneurotic edema
- Tumors
- Laryngospasm

III. Pulmonary causes
- Infections – Pneumonia, bronchitis
- Asthma
- Acute respiratory distress syndrome (ARDS)
- Pulmonary edema
- Interstitial lung diseases
- Pneumoconiosis
- Chronic obstructive pulmonary disease (COPD)
- Tumors

IV. Cardiac causes
- Myocardial infarction
- Congestive cardiac failure (CCF)
- Shock
- Arrhythmias

V. CNS causes
- CVA
- Meningitis, encephalitis
- Poliomyelitis
- Seizure disorders
- Myasthenia gravis

- Cerebral edema
- Guillain-Barré syndrome
- Polyneuritis
- Tumors

VI. Poisoning
- Phenobarbiton
- Muscle relaxants
- Narcotics
- Organophosphorus compounds
- CO and CO_2

VII. Miscellaneous
- Metabolic
  a. DKA
  b. Uremia
- Endocrine
  a. Addison's
  B. Hypothyroid

38. Aims of airway management (intubation)

1. To ensure airway pathway
2. To facilitate suction and pulmonary hygiene
3. To prevent aspiration
4. To regulate ventilation
5. To administer drugs
6. To prevent hypoxia and hypoventilation
7. To prevent or diminish pulmonary or neurological complications

39. Causes of increased dead space

1. Hypoperfusion
2. Hypotension
3. Low cardiac output
4. Aging
5. Pulmonary emboli
6. Emphysema

40. **Anatomical dead space:** Volume of air in the mouth, pharynx, trachea and the bronchi up to the terminal bronchioles – normally about 150 ml.

41. **Causes of tachypnea (Rapid breathing)**
    1. Due to ↑ BMR
        a. Fever
        b. Thyrotoxicons
        c. Exertion
        d. Infection
    2. RS
        a. Chronic obstructive pulmonary disease (COPD)
        b. Pneumothorax
        c. Pulmonary edema
        d. Pleural disease
        e. Pneumonia
        f. Foreign body in RS passage
        g. Respiratory alkalosis
    3. Abdominal
        a. Obesity
        b. Ascites
        c. Pregnancy
    4. Metabolic
        a. Uremia/Encephalopathy
        b. DKA
        c. Lactic acidosis
        d. Hepatic encephalopathy
    5. CVS
        a. CVA
        b. Encephalopathy
        c. CNS dysfunction
    6. Poison
        a. Salicylates
        b. Amphetamine

   c. Methyl alcohol
   d. Ethylene glycol
7. Miscellaneous
   a. Stress
   b. Pain
   c. Shock
   d. Anemia
   e. Psychogenic
   f. Exertion
   g. Nervousness

42. Causes of bradypnea

1. Poison
   a. Sedatives
   b. Narcotics
   c. Tranquilizers
   d. Barbiturates
   e. Alcohol
   f. Morphine
2. Endocrine
   a. Hypothyroidism
   b. Cushing's syndrome
   c. Adrenal dysfunction
   d. Primary hyperaldosteronism
   e. Diabetic coma
3. COPD with CO_2 retension
4. Diuretics
5. Metabolic alkalosis
6. Pickwickian syndrome
7. CNS dysfunction ↑ ICT
8. Uremia

43. Problems in endotracheal intubation

1. Children have small caliber of trachea
2. Infant head is larger. (Alignment of angle is difficult)
3. Infant tongue is larger for the oral cavity–difficult to intubate
4. Adenoid is large in infant

} Children

5. Female have smaller airway
6. Old people have broader airway
7. Congenital anomalous of air passages pose problem

44. Points to confirm the position of endotracheal tube (in trachea and not in esophagus)

1. Presence of breath sounds on both sides of chest (axillary areas)
2. Symmetrical expansion of both sides of chest on ventilation
3. Absence of air sound in epigastrium
4. Change of cyanosis, etc. after ventilation
5. X-ray confirmation
6. Palpation of tube in the neck – lower position

45. Complications of endotracheal intubation

1. Immediate
2. Delayed
3. Late

1. *Immediate*
    a. Epistaxis
    b. Injury to lip, tongue pharynx, vocal cords
    c. Perforation of esophagus
    d. Spasm of vocal cords/bronchi
    e. Aspiration
    f. Endobronchial intubation
    g. Pneumothorax
    h. Tracheal/bronchial rupture

i. Pneumomediastinum
j. Cardiopulmonary arrest

2. *Delayed*
   a. Laryngeal edema
   b. Leakage/rupture of cuff
   c. Ulceration of vocal cords
   d. Pneumothorax
   f. Pneumomediastinum
   g. Infection:
      i. Pneumonia
      ii. Abscess, etc.
3. *Late*
   a. Sore throat
   b. Laryngeal edema
   c. Trachelitis
   d. Dysphagia
   e. Dysphomia
   f. Hoarseness of voice
   g. Vocal cord adhesions
   h. Vocal cord paralysis
   i. Tracheal innominate artery fistula
   j. Tracheal stenosis
   k. Stridor
   l. Respiratory obstruction
   m. Respiratory arrest

46. Relative contraindications for endotracheal intubation

1. Cervical spine injury
2. Cervical arthritis
3. Ankylosing spondylitis
4. Klippel-Feil syndrome
5. Vertebral multiple myotoma

6. Mechanical upper airway obstruction
    a. FB
    b. Tumor
    c. Abscess
    d. Diphtheria
7. Inability to open mouth
    a. Trismus
    b. Temporomandibular joint pathology
    c. Tetanus
    d. Fits
8. Excessive difficulties in previous attempts
9. Lack of skill
10. Severe maxillofascial trauma

47. Why nasogastric route is preferred than orotracheal route?

1. Better cervical spine immobilization
2. Better tolerated by the conscious patient
3. Swallowing mechanism is less affected
4. Tube is fixed well
5. Patient cannot bite the tube

48. When to remove the intubation tube?

1. When the general condition improves and spontaneous respiration occurs
2. Adequate ventilatory capacity
3. Intact upper airway reflexes – gag reflex; cough reflex

In postoperative patients and those who are in bed, for long time with ↓ cough reflex. Infection is more common in left lower lobe.

In the above conditions, the secretions from the left main bronchus are not drained properly and they may block the left main bronchus.

By the end of 6th month of intrauterine life, approximately 17 generations of tracheobronchial tree is developed.

It is believed that only 1/6th of adult number of alveoli are developed at birth. The remaining alveoli are formed during the first ten years of postnatal life.

49. Asthma (Idiosyncratic and Allergic)

	Intrinsic	*Extrinsic*
1.	Common in old age	Young age
2.	No family history	Positive family history
3.	Skin test negative	Positive
4.	IgE level is normal	↑
5.	No skin lesion	Allergic skin disorders like eczema+
6.	Attacks not precipitated by allergens	Precipitated by allergens
7.	May be seen in any season	Seen in cold and winter season
8.	Nonatopic type	Atopic type

50. Mx will be negative in

1. Miliary TB
2. TB abdomen
3. Extensive advanced TB
4. Patient with TB with viral infection like chickenpox
5. Patients who are on immunosuppressive drugs and steroids
6. Patients who have associated malignancy

51. ↓surfactant leads to

1. Hyaline membrane disease
2. ARDS
3. Patchy atelectasis (after cardiac surgery)
4. Occlusion of main bronchus
5. Occlusion of one pulmonary artery

52. Causes of unilateral pulmonary edema

1. After too much aspiration of pleural fluid (on that side)
2. Aspiration of foreign body leading to pulmonary edema on that side
3. Lung abscess busting open on that side
4. Long standing bed ridden conditions with patient lying on one side for long period.

53. On percussion

S.No.	*Tympanic note*	*Resonance*
1.	Musical quality	Not so
2.	High pitch	Low pitch
3.	Usually seen in fundal air and over intestines	Seen over the lungs

54. Breath sound intensity (BSI) scale:

0 – Absent breath sound
1 – Diminished breath sound
2 – Normal breath sound
3 – Lower intensity of breath sound (e.g. consolidation)

55. Hyperbaric oxygen: Breathing of 100% oxygen, not contaminated with air, at a pressure greater than normal atmospheric pressure (i.e. more than 760 mm Hg – 2 to 3 times more than the atmospheric pressure). It should be limited to 1½ to 2 hours. If it is 3 times more, give for 1½ hours and if it is 2 times more give for 2 hours.

56. Uses of hyperbaric oxygen

1. Carbon monoxide poisoning
2. Cyanide poisoning
3. Gas gangrene (because the organism cannot live in high concretization of O_2)
4. Anemic crisis
5. Thermal burns
6. Decompression sideness
7. Air embolism
8. Mediastinal emphysema

57. Oxygen toxicity

1. Preterm babies always-retrolental fibroplasia → blindness
2. Pulmonary edema

3. Acute respiratory distress syndrome (ARDS)
4. Atelectasis
5. Consolidation
6. CNS complications
    a. Convulsions
    b. Timbreing of the face
    c. Ringing sensation in the ears
    d. Nausea, etc.

58. Muscles that take part in normal respiration

1. Diaphragm (Primary muscles)
2. External intercostals
3. Internal intercostals

59. Accessory muscles of respiration

1. Alan esai
2. Sternomastoid
3. Platysma
4. Intercostals
5. Trapezius

60. Vesicular breath sound

1. Inspiration is prolonged
2. Expiration is short and faint
3. No pause between inspiration and expiration
4. Pitch is low
5. Rusling in quality
6. Better appreciated in auxiliary and infrascapular areas

61. Normal vesicular breath sound indicates that

1. The underlying lung is reasonably ventilated
2. There is no abnormal pathology of chest wall

62. Absent or ↓ intensity of normal vesicular breath sounds

1. Pleural effusion
2. Thickened pleura

3. Obese individuals
4. Hyperinflated lungs, e.g. emphysema

63. Bronchovesicular breath sound

1. Inspiration and expiration are equal
2. Medium pitch
3. Heard over main bronchus area and posterior right upper lung fluids
4. No pause
5. Heard in the I and II intercostals space anteriorly (or)
6. Between the scapula posteriorly and more on right than on the left side

64. Bronchial breath sound

1. Inspiration is shorter than expiration
2. There is a pause between inspiration and expiration
3. Expiration is more intense than inspiration
4. The pitch is more in expiration than inspiration

65. Friction rub

1. Low pitch sound
2. Occurs outside the respiratory tree – pathology is in pleura
3. Dry, grating sound
4. Heard both in inspiration and expiration
5. Machine like quality

66. ↑ VF and VR

1. Consolidation
2. Large cavity near the surface communicating with bronchus
3. Fibrosis
4. Bronchiectasis
5. Collapse due to peripheral bronchial obstruction

67. ↓ VF and VR

1. Thickened pleura
2. Pleural effusion

3. Pyothorax
4. Pneumothorax
5. Emphysema
6. Collapse due to obstruction of major bronchus

68. Percusion

↑ note : 1. Pneumothorax
2. Emphysema
3. Large cavity near the surface

↓ note : 1. Fibrosis
2. Collapse
3. Consolidation
4. Pleural effusion
5. Thickened pleura

↑ note < Resonance - Normal lung
Hyperresonance – Emphysema pneumothorax
Tympanic - Over Traube's space or over intestinal

↓ note Impaired I°
Dull II°
Stony dull III°
Flat note

69. Diaphragmatic dullness at a higher level

1. Diaphragmatic paralysis
2. Phrenic nerve palsy
3. Enlargement of liver
4. Subdiaphragmatic abscess
5. Pregnancy – later stage
6. Massive ascites

70. Palpable rhonchi

Partial obstruction of large bronchus
- Foreign body
- Tumor

71. Palpable pleural rub indicates chronic pathology

72. ↓ Br. sounds

1. Fibrosis
2. Collapse
3. Pleural effusion
4. Pneumothorax
5. Thickened pleura
6. Emphysema

73. Normally the expiratory component of breath sound is faint and is heard only in the early part of expiration. In congestion of lung (e.g. Pneumonia) the quality of breath sound is altered and the expiratory component is more prominent. This may be the earliest feature.

74. Tubular breath sound

1. High pitched

For example Consolidation
Over collapsed lung
Over lungs compressed by large pleural effusion or tension
Pneumothorax

Usually associated with whispering proctology

75. Cavernous breath sound

Low pitch
Aspirate
Hollow in quality
For example, cavity, bronchiectasis, pulmonary fibrosis
Usually associated with whispering proctology

76. Amphoric breath sound

Like blowing across the neck of a bottle – metallic quality
For example; 1. Tension pneumothorax (Here, the intrapleural pressure is↑ than the atmospheric pressure)

2. Large superficial cavity communicating with patent bronchus
3. Bronchopleural fistula

Usually associated with whispering prochalogy.

77. Bronchophony

Spoken words appear to be heard near the ear piece

For example: Consolidation
Cavity with resonating quality
Collapse
Fibrosis } Rare

78. Aegophony

Nasal character of spoken words. Seen in,

1. Over consolidation
2. Above all level of pleural effusion.

Aegophony is usually seen in association with high pitched bronchial breath sound and NOT in low pitched bronchial breath sound.

79. Whispering proctology

Whispered words are distinctly heard in the ear. Seen in, when moderately large bronchus is surrounded by a larger of solid lung reaching to the chest wall.

For example – lobar pneumonia
– cavity of large size communicating with the bronchus
– above the level of pleural effusion

→ Inspiratory wheeze is more common in extrathoracic pathology like in tracheal laryngeal or vocal cord palsy.

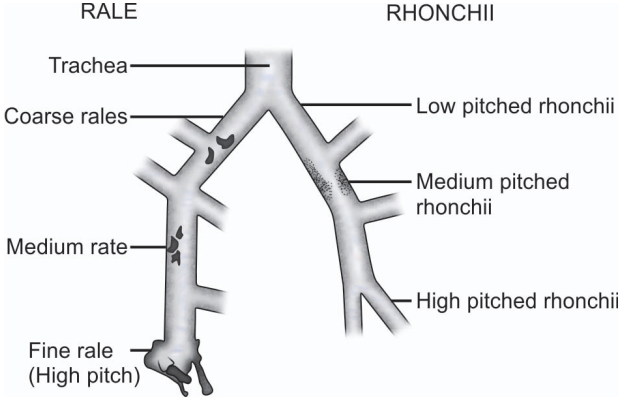
→ Expiratory wheeze is more common in intrathoracic tensions.

→ Causes of wheeze:

1. Partial bronchial obstruction, e.g. tumor, foreign body
2. Bronchospasm
3. Bronchial wall edema
4. Bronchitis/Br. asthma

ADDED SOUNDS

80. RALE



Pleural out best appreciated patients in sitting posture with diaphragm pressing the chest wall. It is a discontinuous sound, each lasting for milliseconds.

81. Rales (Creptitations)

Fine – Pathology at the terminal level
Medium – Pathology at the middle level
Coarse – Pathology at the proximal level

82. High pitched fine (Heard in end of inspiration)

1. Early stage of pneumonia (I stage)
2. Acute miliary TB
3. Apical PT
4. CCF
5. Fibrosis
6. Collapse
7. Asbestosis
8. Sarcoidosis

Medium: Pulmonary edema

Coarse: Low pitched. Heard throughout respiration

1. Resolving pneumonia
2. Bronchiectasis
3. Lung abscess
4. Advanced PT
5. Fibrosing alveolitis

83. Post-tussive aspirations
Heard in
- PT
- Cavity

84. The rale of pulmonary fibrosis is high pitched.

85. Rhonchii (Continuous sound)
Sibilant – High pitched
Sonorous – Low pitched
Sibilant – Heard at the latter part of inspiration. For example, asthma originating in smaller bronchi
Sonorous – Heard in both inspiration and expiration. For example, bronchitis. Originate in larger bronchi.

86.

Crepitation	*Pleural rub*
1. Moist sound	Scratchy sound
2. Heard at the end of inspiration (Fine)	Same phases of inspiration and expiration
3. Cough either abolishes or brings out	No change with cough
4. Not so	More localized
5. Pressure with steth, has no change	When pressure with steth, sound is intensified
6. No pain	Pain +
7. Pathology is in lung parenchyma	In pleura
8. High pitched	Low pitched - Heard for longer duration than rales

87. **Collapse :** Proximal collapse, distal collapse
Absorption collapse, compression collapse
Active collapse, passive collapse

88. **Absorption collapse:** Block in the bronchus and causes collapse distal to compression.

89. **Compression collapse:** Lung is compressed towards the hylum due to pressure effects as in pleural effusion, pneumothorax, etc.

90. **Limitations of percussion in respiratory disorders**
    1. The pleural effusion with less than 200 to 250 ml of fluid cannot be made out by percussion.
    2. Lesions 5 cm or more away from the chest wall and the lesion with less than 2 – 3 cm in diameter will not be made out by percussion.
    3. The apex of lung extends about 4 cm from the first rib anteriorly and extends up to T1, vertebra posteriorly.
    4. VF is better appreciated normally in the 2nd space where trachea bifurcates.
    5. The tracheobronchial tress normal secretion is 60 -90 ml/day.
    6. The lung is resonant all over on percussion. Occasionally slight dullness may be noticed in the right apex.
    7. Alveolus includes the:
        a. Respiratory bronchiole
        b. Alveolar duct
        c. Alveolar sac
        d. Alveoli
    8. Central cyanosis is *best* detected by examining the tongue.
    9. The lung borders may descend up to T12 on deep inspiration and may ascend up to T9 on forced expiration (in posterior aspect).
    10. Anatomical dead space: Volume of air in the mouth, pharynx, trachea and bronchiole up to the terminal bronchioles – normal about 150 ml.

91. Types of fibrosis

1. Interstitial fibrosis
2. Progressive massive fibrosis. For example, pneumoconiosis
3. Parenchymal fibrosis, e.g. infections
4. Idiopathic fibrosis (Cryptogenic fibrosis)
5. Focal fibrosis
6. Replacement fibrosis

92. Respiratory alkalosis

- Due to low PCO_2 (< 35 mm Hg)
- This is due to hyperventilation
- Causes are:
  - Pain
  - Hypoxia
  - Psychogenic hyperventilation
  - Hypermetabolic states
  - Excessive ventilation by mechanical ventilators
- Symptoms include:
  - Light headedness
  - Irritability
  - Paresthenia of extremite and lips
  - Even syncope

93. FEV_1: Quantity (Volume) of air exhaled in the first second of a forced expiration.

94. Respiratory acidosis: Due to inadequate clearance of CO_2 by the lungs. So, there is $\uparrow PCO_2$ (> 45 mm Hg). Patient becomes lethargic.

95. Carbon dioxide is about 20 (Twenty) times more diffusible than oxygen.

96. Components of respiration

a. Ventilation
b. Diffusion
c. Perfusion

97. Rate of diffusion depends on

a. Pressure difference between alveolar gas and blood (RBC) – Directly proportional
b. Thickness of alveolar capillary membrane – Inversely proportional
c. Available surface area (Alveolar size) – Directly proportional)
d. Characteristics of the tissue.

98. Indications for bronchoscopy

Therapeutic

1. Aspiration/lavage in COPD of secretions
2. To stop bleeding
3. Removal of FB
4. Placement of radiomoulded in tumors

Diagnostic

1. Direct visualization of tumors/lesions, etc.
2. For biopsy
3. Lavage for C/S – cytology
4. To get uncontaminated sputum
5. Bronchogram
6. Transtracheal needle aspiration of paratracheal nodes for staging of Ca lung.
7. To find out endobronchial lesions
8. To localize bleeding point
9. FOB can detect lesions only as far as the segrated bronchitis and the peripheral tumors cannot be seen by FOB.

99. Usefulness of pulmonary function tests

A. 1. Can help to detect clinically undetectable conditions
   2. To measure the severity of illness
   3. Helps to monitor the patient's response to therapy

B. In neonates and in pediatric patients, the lung sounds are louder and more bronchial.

C. Diminished breath sound in children indicates:
   a. Hyaline membrane disease
   b. Atelectasis
   c. Emphysema
   d. Pneumothorax

D. Fine rales are heard sometimes in the first 24 hours after delivery.

E. Tracheobronchial tree and lungs start developing in the 4th week of intrauterine life.

F. It is developed from the foregut.

G. The foregut developes into trachea and esophagus separated by esophagiotracheal ridges.

H. The trachea at the lower bud divides into right and left lung bud.

I. Right bud again divides into 3 and left into 2 and thereby forms three and two lobes, respectively.

J. By the end of 6th month of intrauterine life 17 generations of tracheobronchial tree is formed. The additional six divisions are developed during postnatal period.

K. It is estimated that only 1/6 of adult number of alveoli are present at birth. The remaining alveoli are formed during the first-ten years of life.

L. Two different types of cells line the alveoli. They are alveolar epithelial cells type I and type II. The type II cells produce surfactant. The surfactant is responsible for lowering the surface tension at the air alveolar (blood) interface.

M. Before birth, the lungs are filled with fluid containing chloride, protein and minerals and the surfactant. The amount of surfactant increased during the last 2 weeks of pregnancy. When respiration begins at birth, this fluid is reabsorbed rapidly by the blood vessels and lymphatics. But, the surfactant remains in the lung as a thin coast covering the alveolar membrane. After first respiration, the lung collapse flowing expiration is being prevented by surfactant. If the surfactant is less, it will lead to lung collapse during expiration. This will lead to ARDS. It is common in premature infants.

N. Congenital anomalies of lung
   1. Agenesis of lung more on left side. There is absence of lung as well as the corresponding tracheobronchial tree.
   2. Ectopia lung lobe may develop from foregut.
   3. Congenital cystic lung disease. This is formed due to dilatation of terminal bronchi.
   4. Hyaline membrane disease
   5. Sequestration of lung
   6. Tracheoesophageal fistula
   7. *Agencies of lung*
      i. No lung bud
      ii. No tracheobronchial tree
      iii. No vascular supply
   8. *Aplasia*
      i. Rudimentary bronchus +
      ii. No pulmonary parenchyma
      iii. Pulmonary nasal absent
   9. *Hypoplasia*
      i. Tracheobronchial tree +
      ii. Lung parenchyma +
      iii. Vascularity +

O. Weight of right lung – 625 gm
P. Weight of left lung – 560 gm
Q. Apex of lung extends about 2.5 cm above medial end of clavicle or about 3–4 cm above the first costal cartilage.
R. Each lung has got
   i. Apex
   ii. Base – in relation to diaphragm
   iii. Three borders → Inferior, Anterior, Posterior
   iv. Two surfaces
      a. Costal surface
      b. Medial surface

S. Trachea 10 – 11 cm long
T. Trachea extends from larynx up to bifurcation
U. Right main bronchus is 2.5 cm
V. Left main bronchus is 5 cm

100. ***Causes of wheeze***

All wheeze are not asthma

1. Br. asthma
2. Tropical eosinophilia
3. Occulsion (Partial) of tracheobronchial tree (localized)
4. Laryngeal edema
5. Recurrent pulmonary emboli
6. Neoplasm possessing the bronchus (extraluminal or intraluminal)
7. Trachea esophageal fistula
8. Bronchitis
9. Congenital malformation like vascular ring around bronchus.

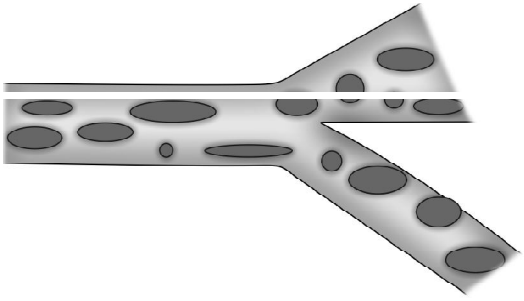
101. ↓ breath sound indicates

1. Poor ventilation of underlying lung, e.g. fibrosis
2. Chest wall pathology, e.g. pleural effusion
3. Poor sound transmission qualities of lung. For example, emphysema

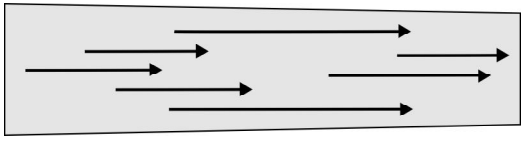
102.

S.No. Obstructive airway disease	*Restrictive airway dsisease*
1. Primarily affects the airway and alveoli	There is reduction in lung volume
2. There is ↓ in airflow	—
3. Air trapping with hyper-inflation of distal air spaces	—
4. ↓ in the lung tissue density	↑ in the lung tissue density

103. a. The airflow in the trachea and main bronchi are turbulent



b. The airflow in the distal airways are laminar



c. There are about 300 million alveoli in the lungs each about 1/3 in diameter
d. The area (surface) of lung is 50 to 100 m^2
e. Tracheobronchial tree has 23 divisions totally. First 16 divisions (up to terminal bronchial) form the conducting zone. This area does not take part in gas exchange. This is called anatomical dead space and it is about 150 ml
f. From 17th division, up to the end (23rd division) it is called acinus and it is from respiratory bronchiole to alveolar sac. This portion takes part in gas exchange and it is called respiratory zone.
g. The average thickness of alveolar capillary membrane (blood gas barrier) is less than 1 μm.
h. The time spent by an erythrocyte in the pulmonary capillary bed is only about 0.75 second and diffusion of gas is completed within this short period

i. Diffusion of gas across the capillary alveolar membrane is passive. It is directly proportional to:
   1. Pressure difference across the membrane
   2. Area of alveolar capillary membrane and inversely proportional to the thickness of alveolar capillary membrane.
   3. The volume of lung which does not eliminate CO_2 is called physiological dead space.
   4. Anatomical dead space is 150 ml.
   5. Extrapulmonary structures include structures from nostril to right and left main bronchus (both inclusive).
   6. Intrapulmonary structures include structures from distal to right and left main bronchus up to the alveolus.
   7. Hypoxemia develops over the PaO_2 is less than 60 mm Hg.
   8. Aim of O_2 therapy is to maintain PaO_2 just above 60 mm Hg. Effort to ↑ the O_2 content of blood. But it will produce O_2 toxicity.
   9. Pulmonary function tests are helpful to assess if there is obstructive or restrictive lung disease.
   10. In COPD, there will be,
       a. ↓ in forced expiratory flow rate
       b. ↓ in FEV_1
       c. FEV_1/FVC (Forced vital capacity) is reduced
       d. ↑ residual volume
   11. Examples for obstructive lung disease
       a. Br. asthma
       b. Ch. bronchitis
       c. Emphysema
       d. Bronchitis
       e. Upper airway obstruction
          i. Tumors
          ii. F.B.
          iii. Stenosis

12. Restrictive lung diseases
    a. Pneumoconiosis
    b. Interstitial fibrosis
    c. Space occupying leison – Tumors, cysts, etc.
    d. Pleural effusion
    e. Pneumothorax
    f. Chest wall diseases
        i. Kyphosis
        ii. Scotrosis
    g. Neuromuscular disorders, etc.

104. Drugs causing lung diseases (Lung injury)

1. Methotrexate
2. D.Penicillamine
3. Gold solts
4. Sulfasalazine
5. Radiation

105. A. Sputum for AFB
    a. Dry the slide
    b. Pour strong carbol function. Boil for 1 – 2 minutes. Wait for 5 minutes
    c. Wash with water
    d. Pour gentian violet. Wait for 3 – 5 minutes. Wash it with water
    e. Add 75% alcohol or gram iodine for 30 seconds. Wash with water.
    f. Add methylene blue. Wait for 3 minutes.
    g. Wash with water
    h. Dry it and see under oil immersion.

B. Trapped lung
Shock lung
Pump lung
Post perfusion lung
Stiff lung

C. Babies born earlier than 38 weeks of gestation are considered premature.
D. RS:
   a. Aim of O_2 therapy – to keep PaO_2 just above 60 mm Hg. Above this level
      1. There will be oxygen toxicity
      2. There will not be significant ↑ in the arterial O_2 content.
   b. Complications of bronchoscopy:
      1. Bleeding
      2. Pneumothorax
      3. Arrhythmias
      4. Cardiac arrest

106. ***Bronchitis:*** Primarily an anatomical lesion, characterized by irreversible dilatation of one or more proximal and medium sized bronchiole, due to destruction of vascular and elastic supporting tissues of the bronchial walls.

Usually accompanied by collapse

Etiology

a. *Infection:* Bacterial, viral, paracyte, fungal
b. *Bronchial obstruction:* FB, growth, nodes, mucoid plug
c. *Congenital defects:* Bronchomalacia, bronchial cyst, ectopic bronchus, pulmonary artery aneurysm (Young syndrome – Obstructive azns pernia with chronic sinopulmonary infection develop bronchiectasis)
d. *Immunodeficiency:* Immunoglobin deficiency
e. *Hereditary defect:* Immotile cilia syndrome, cartilaginous syndrome, cystic fibrosis, alpha antitrypsin deficiency
f. Others
   a. Young syndrome
   b. Recurrent aspiration pneumonia due to alcohol, fits, etc.
   c. Yellow nail syndrome

107. Pathogenesis

Obstruction
↓
Stasis
↓
Infection
↓
Destruction

Lower lobes commonly affected. Sometimes distal bronchi are also affected. Norcosal surface → smaller → inflamed → ulcerated → granulation trime → fibrosis.

108. Radiological classifications

1. Cylindrical or falsiform
   a. No major changes
   b. Bronchi are almost straight
2. Varicose type – Dilated, irregular, distorted

PNEUMONIA

109. Resolution of pneumonia depends on:

1. Age of patient
2. Immune status of patient
3. Type of organism/organisms
4. Associated conditions like malignancy, diabetes mellitus
5. Smoking/alcohol
6. Associated viral infection, etc.
7. Whether on drugs like immunosuppressant

The clinical improvement occurs earlier in pneumonia, than the radiological improvement.

110. Causes of insidious onset of prodromal symptoms in pneumonia

1. Old age
2. Cachexia individuals

3. Chronic obstructive pulmonary disease (COPD)
4. Alcoholism
5. Organisms like:
   a. *Mycoplasmae pneumonia*
   b. *Haemophilus influenzae*

111. Causes of upper lobe pneumonia

1. Fungal – Coccidioidomycosis
2. TB
3. Viral
4. Extraneous pressure over upper lobe bronchus by lymph nodes, etc.
5. Intrinsic block of upper lobe bronchus, e.g. foreign body
6. Malignancy
7. *Klebsiella pneumoniae*

112. Pneumonia that resolve by fibrosis

1. Tuberculosis
2. Fungal infections

113. Causes of unresolved pneumonia

1. Fungal pneumonia
2. Aspiration pneumonia
3. Pneumonia due to malignancy
4. Pneumonia as a result of obstruction (intrinsic or extrinsic) of a bronchus
5. Poor general conditions – caehexia, diabetes
6. Drugs: Steroids, immunosupperatives
7. Multiple organism
8. Atypical pneumonia
9. Viral pneumonia

114. Causes of nonpyogenic pneumonia

1. *Mycoplasma pneumoniae*
2. Pneumonia associated with psittacosis

3. Pneumonia associated with Q fever
4. Viral pneumonia

115. Causes of poor prognosis in pneumonia

1. Leukopenia
2. Extrapulmonary lesions like cerebral abscess, etc.
3. Multiclluar involvement
4. Bacteremia
5. Pre-existing systemic diseases
6. Infection with type 3 *Pneumococcus*
7. Below 5 years; over 55 years
8. Immunocompromised individuals

116. Aspiration causes lesion in posterior segment of upper lobe and superior segments of lower lobes in supine poster. And in basilar segments of lower lobe in standing posture.

117. Systemic diseases producing pneumonia

1. Chickenpox
2. Measles
3. Q fever
4. Psittacosis
5. Hodgkin's disease
6. Typhoid fever
7. Plague

118. Causes of recurrent pneumonia

1. Bronchial obstruction
2. Recurrent aspiration as in alcoholics and epileptics
3. Immunodeficiency status
4. Malignancy

119. Predisposing factor for pneumonia

1. Unconsciousness
2. Fits
3. Anesthesia
4. Ch. alcoholism

5. Drowning
6. COPD – Ch. bronchitis, etc.,
7. Diabetes mellitus
8. Neuromuscular disorders
9. Head injury
10. Cerebrovascular accidents
11. Previous viral infections
12. Immunodeficiency status
13. Old age
14. Chest deformity
15. Endotracheal and tracheostomy tubes

120. Complications of pneumonia

RS: – Unresolved pneumonia
– Emphysema
– Pleural effusion
– Lung abscess

CVS: – Pericarditis
– Arrhythmias
– Atrial fibrillation
– Pericardial effusion
– Endocarditis

GIT: – Paralytic ileus
– Acute gastric dilatation
– Mild jaundice

Others: – Arthritis
– Cerebral abscess
– Meningitis
– Gangrene of finger, toes, hip and enboles and due to DIC

} Due to hematological spread

Nephritis

121. Viruses producing pneumonia

1. Influenza virus
2. Varicella

3. Measles
4. Adenovirus
5. Cytomegalovirus
6. Rhinovirus

122. Fungi producing pneumonia

1. *Coccidiodmycosis*
2. *Histoplasma*
3. *Candida*
4. *Actinomycosis*

123. Lung abscess as a complication of pneumonia seen in:

1. *Staphylococcus pneumoniae*
2. *Klebsiella pneumoniae*
3. Amoebic infection
4. Tuberculosis

124. Parasites producing pneumonia

1. *Toxoplasma*
2. *Amoeba*
3. *Pneumocystis carinii*
4. *Ancyst duodenal*
5. *Ascaris lumbricoides*
6. *Strongyloides stercoralis*

125. Solitary round lesion in X-ray chest (Size 1.5 to 3 cm diameter)

1. Bronchial carcinoma
2. Secondary
3. TB – tuberculoma
4. Benign tumor
5. Hydatid cyst
6. Rarely
    i. Lung abscess
    ii. Pneumonia

iii. Infarct
iv. INH cyst
7. Phantom tumor

126. Differential diagnosis of miliary mottling X-ray

1. Miliary TB
2. Sarcoidosis
3. Hemociderosis
4. Staphylococcal pneumonia in young patients
5. Pneumoconiosis
6. Tropical eosinophilia
7. Secondaries in the lungs
8. Lobular pneumonia

127. Commonly used sclerosing agents

1. (Intrapleural) Tetracycline (Pleurodesis)
2. Cytotoxic agents
3. Talc in an aerosol

PLEURAL EFFUSION

128. Causes of hematogenous pleural effusion

1. Malignancy
2. TB
3. Pulmonary infarction
4. Pleural effusion due to trauma
5. Hematological disorders
6. Those who are on anticoagulants
7. Dissecting aneurysm of aorta – The effusion is on left side
8. After thoracic surgery

129. Causes of transudation pleural effusion

1. CCF
2. Nephrotic syndrome
3. Cirrhosis liver

4. Hypoproteinemia
5. Pulmonary infarction

130. Causes exudative pleural effusion (usually exudates causes pleural pain than transudate)

1. TB
2. Empyema
3. Pulmonary infarction
4. Malignancy
5. Chylothorax
6. Rheumatoid arthritis, SLE
7. Pancreatitis (Lt. sided effusion)
8. Fungal infection
9. Asbestosis
10. Sarcoidosis

131. Pseudochylous effusion

There will not be fat globules seen in:

1. Long standing pleural effusion
2. Long standing – due to TB
3. Cholesterol level is high

132. Causes of pleural effusion

CVS	– Congestive cardiac failure
	– SVC obstruction
	– Constrictive pericarditis
	– Pulmonary thromboembolism
	– Pulmonary infarction
	– Rupture of aortic aneurysm
	– Dissecting aneurysm of aorta
RS	– Bacterial: TB, Strepto, Styphylo, etc.
	– Fungal
	– Viral : Coxsackie B
	Echo
	– Parasites : Amoebiasis

Abd	–	Cirrhosis liver
	–	Pancreatitis
	–	Pseudopancreatic cyst
	–	Subdiaphragmatic abscess
	–	Amoebic liver abscess
	–	Meig's syndrome
Collagen disease	–	SLE
	–	Rheumatoid arthritis
Trauma	–	Hemothorax
	–	Chylothorax
	–	Esophageal rupture
Neoplasm	–	Primary – Mesothelioma
	–	Secondary – Ovary
		Uterus
		Lungs
		Stomach
		Lymphomas
Renal	–	Nephrotic syndrome
	–	Hemodialysis
	–	Peritoneal dialysis
Others	–	Asbestosis
	–	Hypoproteineuria
	–	Myxedema
	–	Yellow nail syndrome
	–	Familial mediterranean fever
Drugs	–	Methysergide
	–	Nitrofurantoin
Idiopathic		

133. Pain present in dry pluracy and it subsides the fluid collects or when the patient lies down in the lateral side of affected rib as it presents pleural movement.

134. Causes of bilateral pleural thickening – Asbestosis

135. Causes of pleural effusion

a. ↑ hydrostatic pressure – CCF
b. ↑ vascular permeability – pneumonia
c. ↑ intrapleural negative pressure – atelectasis
d. ↓ lymphatic drainage – mediastinal carcinoma
e. ↓ oncotic pressure – nephrotic syndrome

136. Above the level of pleural effusion look for

a. Skodoic resonance (skodasic tympany)
b. Bronchial breath sound
c. Whispering proctology
d. Aegophromy

137. Pleural effusion

1. Straw color – TB, CCF, cirrhosis liver
2. Hematogenous – Malignancy, pulmonary infarction, trauma, after thoracic surgery, TB
3. Yellowish green – Rheumatoid arthritis
4. Millery white – Chylothorax, pseudochytous effusion
5. Chocolate color – Amoebic liver abscess, bursting into pleural space

138. Eosinophils in pleural fluid is significant it is more than 10% of total leukocytes. They are seen in:

1. Polyarteritis nodosa
2. Fungal infections
3. Parasitic infections
4. Pulmonary infarction
5. Hemothorax
6. Pneumothorax

139. If the glucose level in pleural fluid is low (i.e. less than 60 mg%) it indicates

1. Rheumatoid arthritis with effusion
2. Emphysema

3. Malignancy
4. Esophageal rupture

140. Causes of ↑ amylase level in pleural fluid

1. Pancreatitis
2. Pseudopancreatic cyst
3. Esophageal rupture
4. Malignancy of lung
   - primary
   - secondary

141. How to say whether the pleural fluid is hemorrhagic or traumatic?

1. In hematogenous effusion the clot is incomplete on standing, whereas it is complete clot in traumatic aspiration.
2. Compare the hematocrit of aspirated material with that of blood. Both will be more or less same if it is traumatic.

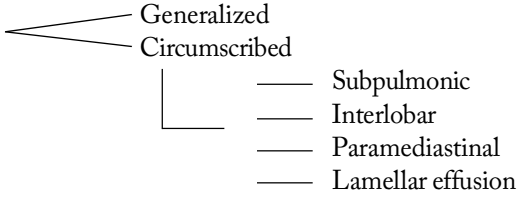
142. Complications of pleural aspiration

1. Unilateral pulmonary edema
2. Hydropneumothorax
3. Introduction if infection leading to empyema
4. Accidental rupture of liver/spleen
5. Stroke due to protein loss if more amount is aspirated
6. Tachycardia
7. Hypotension
8. Respiratory distress
9. Air embolism

143. How much fluid can be aspirated in a single sitting?

Minimum : 500 ml
Maximum : 1000 ml (or) stop when cough reflex sets in

144. Pleural effusion



145. Loculated effusion

1. The borders are more conex
2. Evidence of pleural disease (like pleural thickening) may be seen elsewhere.
3. No air bronchogram is seen.

146. Viral infection rarely affects pleura

- In pseudotumor (phantom tumor) or vanishing tumor – effusion disappears after treatment. Here, the effusion is usually in minor fissure.
- Interlobar effusion is more common in CCF and it disappears were CCF is treated.
- Pleural fibrosis bodies (PLEURAL MICE): They are free movable pedimented masses attached to pleura, seen in pleural space. Sometimes as large as 4 to 5 cm. They are seen in long standing pneumothorax.
- Normally not more than 10 to 20 ml of clear, acellular, serious fluid is seen in the pleural cavity at any given time.
- The pressure in pleural cavity is normally minus 5 cm of H_2O in expiration. It decreases further in inspiration.
- About 700 ml of pleural fluid is formed and absorbed in a day in normal adult.
- There should be at least 5000 to 6000 RBCs/cubic ml to say the effusion is hemorrhagic.
- The WBC will be > 500/cubic ml in exudate.

147.

	Parietal pleura	*Visceral pleura*
Vascularity	Less vascular Blood supply is mainly from systemic vessels	More vascular Mainly from pulmonary vessels
Pain sensory	Has sensory nerve receptors	No
Attachment of pleura	Loosely attached to chest wall	Firmly attached to lung
Lymphatic drainage	By intercostals and mediastinal nodes	Lymphatic drainage is by hilar nodes
Secretion	Pleural fluid is secreted by paricta pleura	Absorbed by visceral pleura

148. DD of mediastinal effusion

1. Pericardial fat
2. Pericardial cyst
3. Pericardial diverticulum
4. Enlarged left atrium
5. Mediastinal tumors
6. Collapse/consolidation of lungs
7. Cold abscess
8. Esophageal diverticulum

149. To shift the mediastinum to the opposite side, there should be a minimum of 1000 ml. Below this level there will not be mediastinal shift.

150.

S.No.	*Exudates pH <7.3*	*Transudates pH >7.4*
1.	Usually unilateral	Bilateral
2.	Clots on standing	Not so
3.	Protein >3 g%	<3g%

Contd...

Contd...

S.No.	*Exudates pH <7.3*	*Transudates pH >7.4*
4.	Lactic dehydrogenase is high > 200 IU	Low
5.	Sp gravity > 1.015	< 1.015
6.	Pleural fluid/serum LDH ratio is > 0.6	< 0.6
7.	Forms due to alteration in membrane permeability	From due to changes in hydrostatic and oncotic presences
8.	Primary disease of pleura is common	Less common
9.	White cells more	Less
10.	Glucose is low	Normal as in blood
11.	Turbid	Transparent
12.	Pleural fluid protein/serum protein ratio > 0.5	Pleural effusion less than 0.5

151. Chylous effusion (Chylothorax)

1. Filariasis
2. Any conditions causing obstruction of thoracic duct
   a. Lymphoma
   b. Mediastinal spread of bronchogenic carcinoma
   c. Mediastinal tumor
   d. Mediastinal fibrosis
3. Injury to thoracic duct: In chylothorax the fat globules will be present. It is usually on the right side

152. Causes of emphysema

1. Direct spread of infection from adjacent lung. For example, lung abscess pneumonia
2. Subdiaphragmatic abscess
3. Esophageal perforation/rupture
4. Thoracic surgery with secondary infection of pleura

5. Hematogenous spread of pyogenic infection from distant organs
6. Fungus infection – Actinomyosis
7. Secondary infection of pleural effusion after tapping
8. Lung abscess
9. Mediastinal infection
10. Infection of bronchopleural fistula

153. Causes of bilateral pleural effusion

1. CCF: Here, the right side fluid collection more than the left. If the fluid is more on left or only on left side, other causes should be excluded.
2. Nephrotic syndrome
3. Hypoproteinuria
4. Cirrhosis liver
5. SLE
6. Myxedema

154. Rare causes of pleural effusion

1. Yellow nail syndrome
2. Familial paroxysmal (familial mediterranean fever)
3. Sarcoidosis

155. Syndromes associated with pleural effusion

1. Meig's syndrome
2. Yellow nail syndrome
3. Oculomecocutaneous syndrome

156. Causes of transient mild pleural effusion

1. Rheumatic fever
2. Familial mediterranean fever
3. Drugs: Methysergide / Nitrofurantion

157. Features of TB effusion

1. Can occur at any stage of disease
2. Rare before puberty

3. Can be hemorrhagic also
4. Can occur unilaterally or bilaterally

158. Centrifuge chylous effusion, the upper column will be thick, whereas in exudates due to ↑ WBCs after centrifuge the upper column will be clear.

159. When to suspect empysema clinically?

1. Pt. is toxic/febrile with constitutional symptom
2. Intercostals bulge +
3. Percussion tenderness +
4. High pleural fluid WBC level
5. ↑ PMN leukocytes
6. High pleural fluid protein
7. Pleural fluid pH <7.2
8. Pleural LDH is >600 mg/dl
9. Pleural fluid glucose <40 mg%

160. Fibrothorax: Inseparable fusion of partial and visceral plasma due to adhesions. This is due to formation of fibroid, hyaline, nonelastic collagen fibers within the pleural space. There may be classification occurs as a complication of:

- Empyema
- Hemothorax
- TB effusion

Treatment: Decortication – i.e. removing the 'peel' from the pleural surface.

161. Causes of right sided pleural effusion

1. CCF (Rt. heart failure)
2. Amoebic liver abscess → Rt. pleural space
3. Meig's syndrome
4. Diseases of right lung like TB, malignancy, etc.
5. Chylothorax

162. Causes of left sided pleural effusion

1. Left heart failure
2. Acute pancreatitis
3. Pathology of Lt. lung like PT, abscess, malignancy, etc.
4. Amoebic abscess of left side of liver gushing into Lt. pleural cavity
5. Pseudopancreatic cyst.

163. Rare causes of pneumothorax

1. Catamerisal pneumothorax (Occurs during menstruation)
2. Ehlers-Danlos syndrome
3. Complication of adult respiratory distress syndrome

164. Nonpulmonary causes of pleural effusion

1. CCF
2. Cirrhosis liver
3. Nephrotic syndrome
4. Meig syndrome
5. Hypoproteinuria
6. Subdiaphragmatic abscess
7. Pancreatitis
8. Following abdominal surgery

MEDIASTINE LESIONS

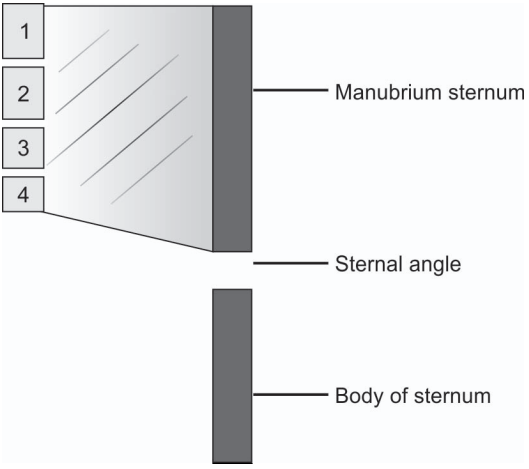
165. Mediastinal lesions

Boundaries

Above : Thoracic inlet
Below : Diaphragm
Anterior : Sternum
Posterior : Paravertebral gutter and ribs
Lateral : Mediastinal pleura

Superior mediastinum
Anterior mediastinum
Middle mediastinum
Posterior mediastinum

166. Superior Mediastinum



Above : Thoracic inlet
Below : Line drawn from T4 to sternal angle
Laterally : Mediastinal pleura
Anterior : Manubrium sternal
Posterior : Upper thoracic vertebra

167. Contents of superior mediastinum

1. Thymuses
2. Aortic arch
3. Brachiocephalic artery
4. Lt. common carotid artery
5. Lt. subetarian artery
6. Brachiocephalic vein
7. SVC (upper hole)
8. Vagus nerve
9. Phrenic nerve
10. Lt. recurrent trapezius nerve
11. Trachea

12. Esophagus
13. Thoracic duct
14. Paratracheal lymph nodes
15. Tracheobronchial lymph nodes

168. Disorders of superior mediastinum

1. Thymic tumors
2. Lymphomas
3. Lymphadenopathy
   a. TB
   b. Leukemia
   c. Malignancy
   d. Sarcoidosis, etc.
4. Aortic aneurysm
5. Hemangioma
6. Esophageal tension
7. Mediastinal abscess
8. Intrathoracic thyroid
9. Teratoma
10. Cystic hygoma

169. Anterior mediastinum

Anterior	:	Body of sternum
Posterior	:	Pericardium
Above	:	Superior mediastinum
Below	:	Diaphragm
Contents	:	1. Lymph nodes (2 or 3)
		2. Areolar tissue

170. Disorders of anterior mediastinum

1. Thymic tumors
2. Teratoma
3. Interthoracic thyroid
4. Pleuropericardial cyst
5. Cystic hygoma

6. Lymphoma
7. Lymphaneuropathy

171. Middle mediastinum

Anterior : Anterior mediastinum
Posterior : Posterior mediastinum
Above : Superior mediastinum
Below : Diaphragm
Contents : 1. Heart
2. Ascending aorta
3. SVC (lower half)
4. Terminal part of azygos vein
5. Pulmonary artery
6. Phrenic nerve
7. Lymph nodes
8. Bifurcation of trachea

172. Disorders of middle mediastinum

1. Aortic aneurysm
2. Anomalies of great vessels
3. Cardiac tumors
4. Bronchogenic cyst
5. Lymphoma
6. Lymph node disorders

173. Posterior mediastinum

Anterior : Anterior mediastinum
Posterior : T5 to T12 vertebral
Below : Diaphragm
Above : Superior mediastinum
Lateral : Mediastinal pleura
Contents : 1. Esophagus
2. Descending aorta
3. Thoracic duct

4. Vagus nerve
5. Intercostal nerves
6. Lymph nodes
7. Sympathetic chain
8. Azygos vein

174. Disorders

1. Neurogenic tumors and cysts
2. Gastroenteric cyst
3. Bronchogenic cyst
4. Meningocyte
5. Aortic aneurysm
6. Posterior thyroid tumors
7. Lymphoma

DIAPHRAGMATIC PARALYSIS

175. Causes of bilateral diaphragmatic paralysis

1. High cervical cord lesion (C3 –C5)
2. MND
3. Poliomyelitis
4. Polyneuropathies
5. Acute infective polyneuritis
6. Bilateral phrenic nerve lesion due to mediastinal lesion

RESPIRATORY FUNCTION

176. Bedside examination of respiratory function

1. *Match test*: Keep a lighted candle at 6 inches distance from the patient's mouth. Ask him to blow it out in one single expiration. It cannot be extinguished in respiratory failure.
2. *Counting test*: Ask the patient to count 1,2,3 and so on in one single breath. Normally, he will be able to count up to 40. This will be less in respiratory failure.

3. *Forced expiratory time*: Ask the patient to breath in maximum and then ask him to expire with the mouth with open, until the lungs are completely empty. Normally, the time taken to expire the full air is less than three seconds. If it is more, it indicates COPD. This is called forced expiratory time. This can be done by placing the steth over trachea and counting the time.
    - Inspiration is difficult in upper respiratory pathology.
    - Expiration is difficult in lower respiratory pathology.

SPUTUM EXAMINATION

177. Causes of small amount of sputum

1. Br. asthma
2. Bronchitis
3. Pneumonia (During resolution stage)

178. Causes of large amount of sputum

1. Lung abscess
2. Bronchiectasis
3. Fungal infection
4. Bronchopleural fistula
5. Anaerobic infections

MISCELLANEOUS

179. Complications of bronchoscopy

1. Bleeding
2. Pneumothorax
3. Cardiac arrhythmias
4. Sudden cardiac arrest
5. Pneumomediastinum

180. Causes of hypoventilation

1. Respiratory failure
2. Hypercapnea

3. Sedative/norcotic overdose
4. Brainstem compression

181. ***Hyperpnea*: ↑ rate and depth of respiration in proportion to increased metabolism.**
***Hyperventilation*: ↑ ventilation in excess of metabolic requirement.**
***Tachypnea*: ↑ rate of respiration**

182. Causes of hyperventilation

1. Acidosis
2. Salicylate poisoning
3. Sepsis
4. Hypoxia
5. Psychogenic
6. Cerebral compression

183. Causes of ↓ PO_2

1. Hypoventilation
2. Reversal of shunt

184. Unresolved or delayed resolution of pneumonia is to be suspected if there is pulmonary infiltrates associated with fever, chest pain, breathlessness, malaise fatigue and sputum, lasting for more than 4-6 weeks.

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